HOARD'S DAIRYMAN

75 YEARS OF LEADERSHIP
1885-1960

JULY 25, 1960

THE NATIONAL DAIRY FARM MAGAZINE

Now! Zero® AUTOMATION

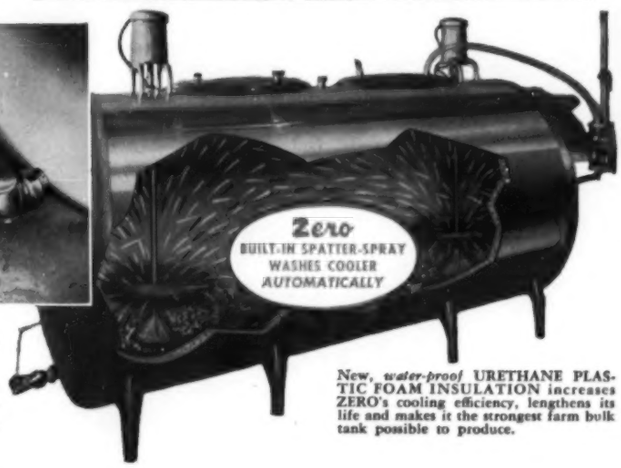
Gives You BUILT-IN "PUSH-BUTTON" CLEAN-UP!

JUST TURN A SWITCH ...and this New Zero Bulk Milk Tank Cleans Itself!

EVERYTHING IS BUILT-IN

Here's news you've long awaited . . . the dairyman's dream come true! ZERO . . . pioneer of the major developments in farm bulk milk coolers . . . now presents the first bulk milk tank that's *completely automatic.* This new, ultra-modern ZERO T-20 *COMPLETELY-AUTOMATIC VACUUM* BULK MILK COOLER *washes, rinses* and *sanitizes itself . . . at the simple turn of a switch.* And once you turn the switch . . . its entire cleansing operation . . . from start to finish . . . is as *"push-button" automatic* as the home automatic laundry washer. This new ZERO is the greatest time-saving, labor-saving bulk milk tank ever made. It greatly reduces milk-handling costs . . . assures higher-quality milk . . . and bigger milk profit!

YOU'LL BE PLEASANTLY SURPRISED WHEN YOU COMPARE ZERO'S LOW PRICES WITH PRICES OF OLD-FASHIONED BULK MILK TANKS!



New, *water-proof* URETHANE PLASTIC FOAM INSULATION increases ZERO's cooling efficiency, lengthens its life and makes it the strongest farm bulk tank possible to produce.

ONLY Zero's ROUND-DESIGN, VACUUM AND PATENTED SPATTER-SPRAY WASHER MAKE THIS POSSIBLE . . . OPERATION IS SIMPLE!

The photo above shows how easy it is to operate this new ZERO's *completely-automatic* cleansing system. You simply set the *built-in,* automatic Timer-Clock . . . and *turn a single switch.* That's all!

The Timer-Clock automatically starts the vacuum pump. Vacuum draws the Drain Ball, shown in small photo above, tightly against the drain opening, sealing it shut . . . and also sealing the lids down tight. The detergent is flushed into the tank as the water passes through the *built-in* Detergent Jar before entering the tank.

THIS IS A COMPLETE CLEANSING SYSTEM . . . *with everything, including all Controls, built-in.* This ZERO has no conglomeration of makeshift gadgets to connect, insert in tank, remove, disconnect, wash and store away each clean-up.

CLEANS BETTER! Photo at upper right shows this ZERO's *exclusive, patented, built-in Spatter-Spray Automatic Washer in action.* Twin impellers hurl a double crossfire of water with *"tornado"* force . . . at and below the waterline . . . against this ZERO's round, stainless steel sides, ends and vacuum-sealed lids. Round-shaped . . . there are no hard-to-clean crevices or corners. Official records show that bacteria averages are greatly reduced by ZERO cleaning.

PATENTED "SWOOPED-DOWN" OPENINGS make all milk contact surfaces of this ZERO easily visible and accessible. Brushing is kept to a minimum.

ZERO NOW COSTS LESS! This is ZERO's new, compact BIG-SHORTY model . . . the *big* tank that fits into a *small* milk house. Even with this built-in, labor-saving equipment . . . savings due to compact design and volume production enable us to offer this new ZERO at reduced cost.

SEE YOUR ZERO DEALER! Mail Coupon today for full information, including specifications and sizes . . . location of your nearest ZERO installation . . . and name of your nearest ZERO Dealer!

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A BASIC MANUFACTURER

ALSO GOOD USED EQUIPMENT
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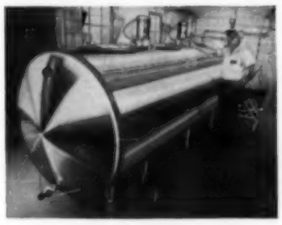

If you visit this famous experimental farm, near Gray Summit, Missouri . . . you'll see the most up-to-date dairy farm equipment; including the ultra-modern, *completely-automatic,* 1200-gallon ZERO Bulk Milk Tank shown at right.

FREE! NEW 14-PAGE ILLUSTRATED BOOK

— describes in detail everything you should know before you invest in any milk-handling equipment. Explains how modern ZERO AUTOMATION saves time, labor and increases milk profits. Gives full information about the ZERO T-20 COMPLETELY-AUTOMATIC VACUUM BULK MILK COOLER — including dimensions of all different capacity ZERO Tanks. Mail Coupon for FREE Book today!

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SIZE OF MY MILK HOUSE.....

ADDRESS OR RFD.....

TOWN..... STATE.....

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COMPLETELY-AUTOMATIC
BULK MILK COOLER
—with BUILT-IN SPATTER-SPRAY
AUTOMATIC WASHER

IF IT ISN'T A Zero . . . IT ISN'T COMPLETELY AUTOMATIC!

35

Sell every drop of your milk

Land O'Lakes Calf Milk Replacer switches calves immediately after colostrum, lets you sell all your valuable milk! Contains 10% added fats, 22% more calories—no cereals. It's a milk product!

If you sell fluid milk, you can now increase your base and boost milk profits the year around. If you sell only manufacturing milk, you can market every drop.

Simply switch your calves at 4 days to Land O'Lakes Calf Milk Replacer. Calf Milk Replacer takes calves off the milk you should be selling.

And remember this: Calf Milk Replacer is a *milk product*, not a milk substitute, so it cannot create a milk surplus. (Contains no cereals.) It is, however, fortified with vitamins, trace minerals, antibiotics. It does contain 10% added fats to give your calves 22% extra calories over and above maintenance. Extra calories for building extra weight, better hair coat and thriftier condition.

Yet, with all these advantages, you can feed Land O'Lakes Calf Milk Replacer for about $1.75 per hundredweight—far under the price of fluid milk. That's where your profit comes in!

Isn't it time you *made the switch? It's as easy as walking into your Land O'Lakes dealer's and saying Calf Milk Replacer!*

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COLORADO: Denver Milk Producers, Inc.

IDAHO: Idaho Egg Producers

ILLINOIS: Illinois Milk Producers

IOWA: Land O'Lakes Dealers

MICHIGAN: Michigan Farm Bureau Services, Inc.

MINNESOTA: Land O'Lakes Dealers

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MONTANA: Ceretana Dealers of Montana Flour Mills

NEBRASKA: Land O'Lakes Dealers

NORTH DAKOTA: Land O'Lakes Dealers

OREGON: Pacific Supply Cooperative

SOUTH DAKOTA: Land O'Lakes Dealers

TENNESSEE: Mid-South Milk Producers Association

TEXAS: Gulf Coast Federated Feed Association; North Texas Producers Association; Wichita Falls Area Milk Producers Association

UTAH: Utah Poultry and Farmers Cooperative Association

WASHINGTON: Washington Cooperative Farmers Association

WISCONSIN: Land O'Lakes Dealers; Wisconsin Farmco Service

WYOMING: Big Horn Cooperative Marketing Association

SOLD AS CALF MAKER IN

ALABAMA, FLORIDA, GEORGIA: The Cotton Producers Association

DELAWARE, KENTUCKY, MARYLAND, VIRGINIA, WEST VIRGINIA, TENNESSEE: Southern States Cooperative, Inc.

INDIANA: Indiana Farm Bureau Cooperative Association, Inc.

NORTH CAROLINA, SOUTH CAROLINA: Farmers Cooperative Exchange, Inc.

SOLD AS FELCO CALF DEVELOPER IN

IOWA: Farmers Elevator Service Co.

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Certified for feeding efficiency by Anoka Research Farms.

Land O'Lakes Calf Milk Replacer

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Cows on dry, brown summer pastures eat less, lose body condition; and milk flow drops.

Cows at Purina's Research Farm demonstrate . . .

how to beat "summer milk slump"

As summer pastures become dry, brown and coarse, they lose feed value. Cows find them less palatable and eat less. And that's when "summer milk slump" sets in.

Purina Researchmen proved just how costly a summer diet of straight grass can be to dairy cows in a carefully conducted feeding test at the Purina Research Farm. In April, they divided 18 similar cows from the Purina herd into two groups. One group of nine cows went through the summer on grass alone. The other group of nine received a Purina milking ration with pasture.

By October, the grain-fed cows were well ahead of the other group in milk production. But the real difference came later in the fall and winter. The cows fed grain in the summer were in good body condition and produced well through the winter months.

The cows fed grass alone not only dropped off in milk production, but went into the barn in poor condition. As a result, they used their fall and winter milking rations to build back their bodies, at the cost of continued low milk production.

By feeding milking rations on through the summer, the nine cows in the grain-fed group had the energy and reserve to produce 1,750 pounds extra milk per cow during the period of the test!

Don't let "summer milk slump" cost *you* money! See your Purina Dealer and work out a program that fits your particular conditions.

RALSTON PURINA COMPANY
With 5,000 Purina Dealers Serving
Dairymen from Coast to Coast

HOARD'S DAIRYMAN

The National Dairy Farm Magazine

Publishers
W. D. Hoard & Sons Co.
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Volume 105, No. 14
July 25, 1960

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COVER PICTURE

In few phases of dairying have there been as rapid strides as in butter making in the past 75 years. Mrs. Doris Dyke of the Pioneer Village at Minden, Nebraska, demonstrates the era of farm churning. But Robert Uchytil of the Rice Lake Creamery Company, Wisconsin, is shown taking butter from a continuous butter making unit that delivers 2,400 pounds per hour. Putting it another way, this one piece of equipment today can process, without being touched by human hands, all the milk produced by 12,000 cows in one day!

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 10th of the preceding month. For the 25th of the month issue, copy must be received before the 25th of the preceding month.

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In Canada, address: 550 Burrard Street, Vancouver 1, B.C.

Washington Dairygrams

CONGRESS RECESSES UNTIL AFTER NATIONAL POLITICAL CONVENTIONS. MANY ISSUES UP IN AIR, INCLUDING FARM, DAIRY BILLS. POST CONVENTION ACTION DOUBTFUL.

HOUSE REJECTS WHEAT BILL RECOMMENDED BY COMMITTEE. CITY REPRESENTATIVES KILLED SENATE PROPOSAL, TOO. NEXT MOVE MAY BE TO INCREASE AUTHORITY FOR PAYMENT IN KIND TO REDUCE STOCKS. RECORD HARVEST EXPECTED.

MILK SANITATION ACT APPROVED BY HOUSE SUBCOMMITTEE. BUT NO ACTION EXPECTED THIS YEAR. NEW BILL AND HEARINGS WILL BE REQUIRED NEXT SESSION.

DAIRY PRICE SUPPORT ISSUE STILL ALIVE. SENATE COMMITTEE AND HOUSE SUBCOMMITTEE BOTH APPROVE $3.22 PRICE FOR MANUFACTURING MILK. FLOOR DEBATE PROMISED PRIOR TO ADJOURNMENT.

NATIONAL GRANGE MOVES INTO NEW HOME WITH PRESIDENT AS SPECIAL GUEST AT DEDICATION.

PRICES RECEIVED BY FARMERS DROPPED 2 PER CENT IN MONTH ENDING JUNE 15. COSTS DROPPED 1 PER CENT. PARITY RATIO 79 COMPARED TO 80 IN MAY AND 81 LAST YEAR.

FEDERAL MILK ORDER IN NORTHEASTERN WISCONSIN SAVED AT LAST MINUTE AS A DAIRY COOPERATIVE CHANGED ITS VOTE TO APPROVE PROPOSED AMENDMENTS. U.S.D.A. HAD SERVED NOTICE TO TERMINATE ENTIRE ORDER BECAUSE AMENDMENTS NECESSARY TO ORDER'S CONTINUANCE.

COMPENSATORY PAYMENTS COURT DECISION WILL BE APPEALED BY U.S.D.A. DAIRY COOPERATIVES IN NEW YORK-NEW JERSEY MARKET INSISTED ON APPEAL, BELIEVING ADVERSE DECISION COULD JEOPARDIZE MARKET ORDER.

★ ★ ★

In YOUR next issue!

CONFUSED ABOUT CARE OF DRY COWS? . . . This complete summary of research in this country and abroad concludes that feeding rate should be based on cow's age, her condition, and the roughage quality.

LIVESTOCK LIKE IT COOL! . . . When the temperatures soar up into the 90's, milk production will drop unless you take special precautions. This article is full of money-saving ideas telling what you can do.

SIX WAYS TO CUT FARM MACHINERY COSTS . . . If you are wondering what type equipment to buy, whether or not custom work will be profitable for you, or how equipment should be cared for, don't miss this article!

AND MANY MORE . . .

Easy TO ORDER OR RENEW!

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Fort Atkinson, Wisconsin

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In Canada, address: 550 Burrard Street, Vancouver 1, B.C.

...automatically washes teat cups, claw and milk tube

If you use pail type milkers, here's good news. De Laval's new Teat Cup Washer eliminates hand-washing of teat cups, claw and milk tube. It's such a remarkable work-saving convenience you'll wonder how you ever got along without it.

Here's how it works—after filling your wash vat, you disconnect the milk tube from the milker pail and attach it to the nozzle on the bottom of the washer. Then, turn the vacuum cock on and presto! . . . in a few minutes your teat cups, claw and milk tube are the cleanest clean they've ever been.

Installation? Simple! Cost? Low. Only $35, slightly higher in far west. A small price to get rid of the chore of hand-washing. De Laval's Automatic Teat Cup Washer handles from 1 to 4 milker clusters at one time. It's all stainless steel and top-quality synthetic rubber. See it at your De Laval Dealer's. Or have him send one out to you.

No matter what you need, count on
De Laval to make it better

De Laval equipment costs no more than other makes. And it's dependable—lasts longer, requires less service. But when you need service, De Laval Dealers give you the best.

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Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

"Just a little higher"

I believe that the dairyman's prices should be just a little higher. There should be some kind of a figure arrived at by considering a farmer's investment, time, and other expenses. Then the farmer's milk prices should automatically rise or lower according to the cost of living.

Then, a form of production controls should be practiced. By that I mean a certain amount of milk per month per man.

What's over and above that amount would be surplus and a lower price paid for it. In that way the farmers with low producing cows would soon get them out of the barn. I cannot understand why the farmer must always have to take a percentage for his products when other businesses usually ask 100 per cent.

Also, why must the farmer pay transportation for the products he sells as well as for the products he buys?

Wisconsin W.P.

Electric fence dangerous

Noted in one of your last year's issues a warning about keeping electrical wiring safe.

A "weed burner" electric fencer is dangerous, too. Had one burn down a pile of hay; others have had stubble fields burned off. I saw where a small child was killed by contacting the ground side of an electric fence.

Iowa JAMES ANDERSON

When buying an electric fencer, be sure it has been approved by the Wisconsin Industrial Commission or by the Underwriters' Laboratories, Inc. —The Editors

Disinfect footwear

I am greatly disturbed about our milk inspectors, fieldmen from dairy plants, veterinarians doing state testing for TB, and so forth, who travel from one farm and barn to another and **never** disinfect their boots or shoes.

This has been brought to my attention more so since an experience on my farm last month. Several days after a visit from the milk inspector our cattle became ill with winter dysentery. I'm almost positive it was he who carried it to us as no one else had visited our barn and we hadn't been any place to carry it home.

This disease worked a real hardship on us. It took veterinary visits, gallons of pills, and a lot of doctoring to check it as it went through the whole herd. Worst of all, our whole herd almost completely dried up. Any dairy farmer knows it takes quite awhile to build up production after a siege of something of this order.

Isn't there a law concerning disinfecting of boots or shoes when you have to travel from one farm and barn to another?

Ohio DISTURBED

We are not aware of any law or regulation requiring the disinfecting of footwear when visiting a farm. As most people know, of course, almost all artificial breeding technicians make this a regular practice. Many veterinarians do, too. We think it should be required of all who travel from farm to farm.

—The Editors

Dairy farming in Italy

I was greatly interested in reading L. E. Foote's recent article on dairying in Italy.

As a tutor of zootechny at the University of Milan, i.e. of the most important town in Lombardy where 25 per cent of the whole cattle population, and 70 per cent of all dairy cows are being reared, I think it useful to rectify some of the statements by Mr. Foote.

Of course, that applies only to some slight differences of the reported statements which, no doubt, were made in utterly good faith, since the knowledge of dairy farming in Italy that Mr. Foote was able to acquire was restricted to the provinces of Reggio Emilia and Modena. Both these provinces are, by all means, very important indeed from an agricultural and zootechnical point of view. However, they do not represent the whole of the Italian peninsula.

I shall follow the same order of Mr. Foote's statements. I am quite agreed that in this country most dairy cows are still kept indoors the whole year round. Two fundamental situations, however, must be explained. Italian peasants are chiefly farmers and not breeders, or to be exact, specialized breeders.

We have 107 inhabitants per square kilometer against about 16.2 inhabitants per square kilometer in the United States. When considering only the farming and forestry areas (90 per cent of the whole national territory—278,000 square kilometers) the number of inhabitants rises to about 200 per square kilometer.

To feed all these people it is necessary to exploit even a single square meter of farming soil. The land in the most fertile and flat regions is comparatively expensive, and pasture for the dairy cows is necessarily restricted. However, dairy cattle herds kept out-of-doors throughout the year are becoming more and more numerous in the north, central and south portions of the peninsula.

In the Lombardy plain, the livestock often reaches and exceeds from 5 to 7 quintals liveweight per hectar (one metric hectar corresponds to about 2.5 acres). There are many single farms in the Lombardy plain and elsewhere keeping 80 to over 300 dairy cows. These farms cover from 100 to 300 hectars. They are industrially organized and often highly mechanized.

All this shows rather different conditions from the small farms using a crop-sharing system as described by Mr. Foote, where the farmer and his own family see to everything.

Dairy cattle breeds in Italy are mainly two, the Holstein-Friesian generally imported from Holland, and more recently from the United States, Canada, Argentina, and so forth. Brown Swiss are imported from Switzerland and, on a restricted scale from the United States.

In the past, about 40 per cent of the Italian cattle population were Brown Swiss. At present this number is slightly lower, however, the Brown Swiss are still widespread everywhere throughout the country. It is the most important breed to be found in the Alpine regions of Lombardy and Veneto, as well as in the Sardegna Isle and other areas in southern Italy. There is a tendency to replace them with Holstein-Friesians.

Very important Holstein herds are to be found in the northern, central, and southern areas of the Italian peninsula. Some other equally important herds are located in the Reggio Emilia and Modena areas which seem to be the areas where Mr. Foote is best acquainted.

No such breed as the Red Queen, as reported, are to be found in Italy. I think Mr. Foote meant the Reggiana Rossa breed. He may have heard the name Red Queen mentioned by the local peasants who are still breeding the Rossa breed, more for tradition than for any other reason. The Reggiana Rossa breed has always been a local breed of small importance. In 1956 this breed consisted of 127,000 head, about 0.1 per cent of the cattle population in Italy. This breed is fast decreasing. Some 25 to 30 years ago they were beginning to be replaced by Brown Swiss cattle, and at present by the Holstein breed for crossbreeding purposes.

In any case, the Reggiana Rossa breed was never a dairy breed, but a triple-purpose breed—work and meat and milk

production. Its selection conditions are restricted.

Even the breed Mr. Foote referred to as "our own white cow" does not exist. Probably he refers to the Bianca Modenese or Bianca Padana breed which, like the Reggiana Rossa, is slowly disappearing, being reared only in the mountainous regions of the Apennines. In 1956, there were only about 135,000 head of this breed, 0.15 per cent of the entire cattle population. At present these cattle are still fewer and are being replaced by crossbreeding, particularly with Holstein cattle.

The name that Mr. Foote has translated into English is the name he heard from the local peasants. Razza Nostrana, which in the Italian language is a synonym of "local livestock" of low production and of very small value from the point of view of breed. This breed was also a triple purpose breed.

Another correction concerns the storage and use of manure. Mr. Foote, not being sufficiently acquainted with the areas, does not know to what extent out farmers are concerned with the use of manure.

What they are doing in that direction is the result of many centuries of experience and tradition because of the enormous importance of this natural fertilizer in soil production.

In Lombardy and in the watered areas (deserving to be known since no other regions like it are to be found in the world), the green fodder production lasts up to 8 to 10 months of the year. In the areas of the so-called "marcite" (watered fields), in provinces of Milan, Pavia, Novara, and so forth, grass is being cut 8 to 9 times, about once every 35 days.

These marcite are permanent meadows which, during the winter, are covered up with 20 to 30 centimeters of water from the drainage of the town of Milan. Since that water is warmer than the air temperature, the growing of grass is never discontinued. The amount of green fodder produced per year is over 1,800 to 2,000 quintals per hectar —200 to 220 quintals per hectar and per year of normal dry hay.

The farms have many silos, built mostly with bricks, for the storage of green or semi-dry grasses from maize crops, and many other fodders seasonally grown, that is, between main crops, so that the soil is ever producing throughout the year.

The leaves of trees (elms) are being used only in some areas, particularly in the Emilia province where elms are used in the fields to support vine branches (the vine branch married to the elm as described by an Italian poet). Vineyards, however, are neither to be found in the Lombardy plain nor in many other Italian regions.

Mr. Foote is right when he says cattle diseases are widespread in Italy (tuberculosis, Bang's, genital diseases). Foot and mouth disease, however, is restricted thanks to vaccination on a very large scale. The Italian government has launched a strong campaign against all sorts of cattle ailments and the results obtained are most favorable.

With regard to milk production, the total amount produced in Italy in 1958 was about 72,818,000 quintals (90 per cent of which is cow milk), and over 90 million in 1959. Human consumption, although on the increase, is still restricted, particularly in southern Italy. Some 3,120,000 quintals of cheese and 620,000 quintals of butter were produced in 1956.

I thank you for your consideration of my letter and I thank Mr. Foote for the opportunity offered to my country and myself to get the American people better acquainted with dairy farming in Italy. The United States has done much to help our country in every way and we have much to learn from it in the zootechnical field. It is there, as rightly reminded by Mr. Foote, that we purchase and shall continue to purchase the most outstanding and valuable Holsteins and Brown Swiss sires for breeding purposes.

Italy PROFESSOR T. BONADONNA
University of Milan

What has happened?

What has happened to the Farm Bureau? Back in 1919 a stranger knocked at our door and induced my father to spend $10 to join the Farm Bureau. Dad also agreed to use our model T Ford and spend two days calling on other farmers in the vicinity, and they signed up quite a few members.

For many years I think the Farm Bureau acted in the best interest of the farmer and helped him in many ways. The past few years they seem to have taken an about-face.

Has the insurance business changed Farm Bureau? A great many folks in our locality belong, although they don't even raise a garden and have no farm connection whatever.

Has the Farm Bureau grown too big and too powerful? In most cases Farm Bureau action means success or failure when other farm organizations try to get a program working.

With strong opposition from the Farm Bureau I do not think Secretary Benson would have cut dairy price supports either time. We had a self-help program started that had great possibilities but the Farm Bureau scuttled that.

Here in Michigan we had a milk marketing bill started but we lost out due to the bitter fight the Farm Bureau made against it. Now I learn from the Dairy Record that the Wisconsin agricultural marketing bill was killed due to opposition by the Farm Bureau and the Wisconsin Creameries Association—strange bedfellows. The Farm Bureau has long preached let the farmer stand on his own two feet but is continually jerking the rug out from under him.

If the Farm Bureau can't agree with anyone else's program, I think they are long overdue to come out with one of their own.

Michigan THAD HOLMES

At the recent annual meeting of the American Farm Bureau Federation a dairy program was adopted which read, as follows:

"As a program to fulfill the future needs of dairy farmers, we recommend that the basis for price supports on manufactured dairy products be shifted to a percentage of average market prices during the immediately preceding three years, which will not encourage excessive production.

"We are opposed to production controls for dairy products. We are also opposed to plans for the government to transfer income from some dairy farmers to other dairy farmers by taxing, or penalizing, the production of dairy products." —The Editors

Finest document

I would like to take this opportunity to commend you people on what is without doubt in my mind the finest document of its kind available anywhere. The Christian attitude of your editorials is of value in more than just the material sense. Best regards in continuing your fine efforts.

Alaska RALPH V. BROWN

"hoax . . . farce"

All the moneys spent for all farm programs are a hoax, and the administration of these things eat up most of the entire program, including this farce, soil bank.

I know a few who have their farms in this. All retired farmers or men not farmers, if the truth is known. These tramps are paid money to do nothing from the tax of the other people, who, in turn, are paying their social security and now paying them this Judas money when they are already bled almost to the breaking point.

Another crooked scheme is conservation work, which takes millions of acres and pays men for things they should do themselves. The government has all these acres of tax-free land. I am, in the meantime, paying taxes for this land along with my own. Will I ever see any returned? No, never.

All of these things that the government claims to be doing are nothing but confusion and expense to the honest man and are putting all honest farmers out of business.

Our fathers established a God-fearing nation but I think the devil is running it now.

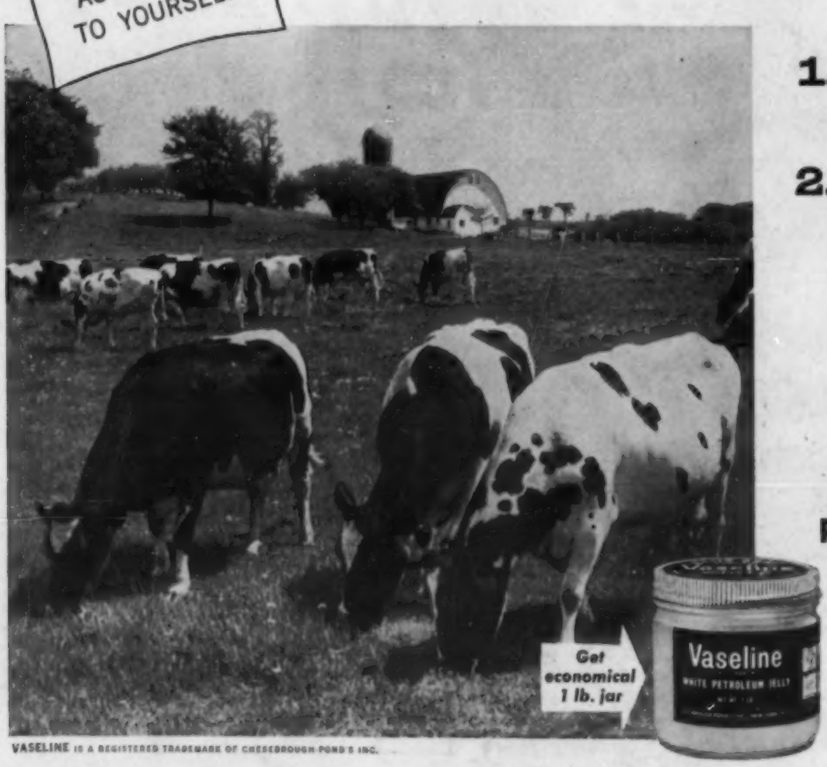
Wisconsin LEO CHAPIN

When animal skin is injured, reach for soothing

'Vaseline' Petroleum Jelly

—works better two ways to help skin heal

IT PAYS TO BE AS GOOD TO YOUR STOCK AS YOU ARE TO YOURSELF!



1. **Protects wounds** from impurities, insects, dirt and foreign bodies...helps to keep open wounds clean.

2. **Speeds up healing** process by protecting delicate tissues from drying out.

Veterinarian-approved for these uses:

Artificial Insemination	Open Scrapes
Chapped Udders	Scratches
Dehorning	Open Insect Bites
Non-infected Wounds	Eczema
Wire Cuts	Base for Numerous Ointments

And 1001 other uses

Protect your animals... protect your pocketbook

Vaseline
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PETROLEUM JELLY

If your vet prescribes 'Vaseline' Veterinary Carbolated Petroleum Jelly and your dealer does not have it, ask him to stock it.

VASELINE IS A REGISTERED TRADEMARK OF CHESEBROUGH-POND'S INC.

COWS NEED A LOT MORE THAN GRASS IN SUMMER

To give every drop of milk they're capable of, cows need the extra energy, proteins, minerals, vitamins and AUREOMYCIN found in formula feeds

Cows bred to be top producers get sustenance from grass — but not as much as they require in order to maintain consistently high production all summer long. This is particularly true in late summer when pasture may be close-cropped or dry. That's why many dairymen are making it a practice to provide a balanced formula feed *all year round.*

What formula feeds do

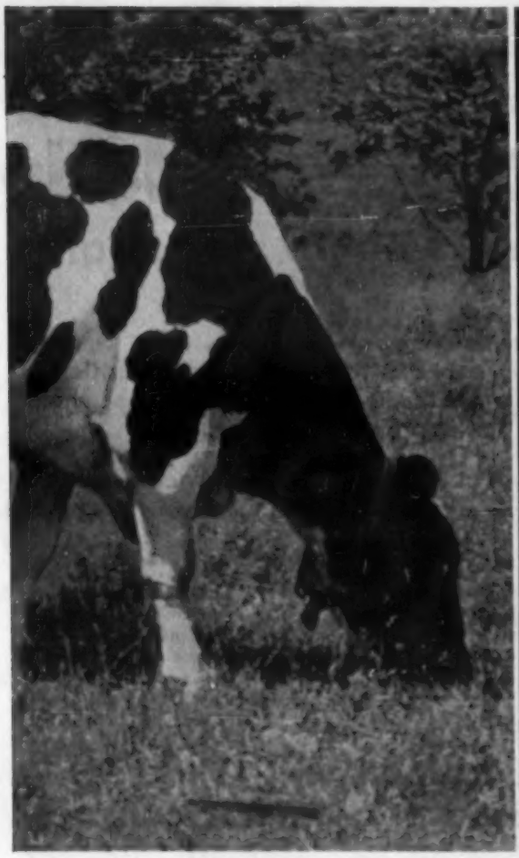
Formula feeds, with their high energy and extra proteins, minerals and vitamins, keep cows in better health, help maintain flesh, help prevent summer production slumps, help reduce the incidence of ketosis. Cows that have freshened in the spring reach peak production quickly and sustain it. Cows that will freshen in the fall taper off more slowly and remain in better weight and condition to produce strong, healthy calves.

What Aureomycin contributes

AUREOMYCIN® in formula feeds gives an extra health boost over and beyond that of other ingredients. This wide-spectrum antibiotic helps reduce invisible, subclinical diseases that prevent cows from making full use of their feed for maximum production. AUREOMYCIN is effective against respiratory infections and foot rot that may result from stress conditions. Tests accepted by FDA and two years of farm use show conclusively that AUREOMYCIN, fed according to directions, leaves no residue in milk at any time.

See your feed manufacturer

Your feed manufacturer or feed dealer can give you full details on the advantages of supplemental pasture feeding. Talk to him. Ask for feeds containing AUREOMYCIN. American Cyanamid Company, Agricultural Division, New York 20, N. Y. **AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*



The supply of proteins, minerals and vitamins from grass and roughage are not enough for your high-producing herd. To maintain milking potential all summer long, provide formula feeds with these extra nutritive values and AUREOMYCIN.

CYANAMID
AUREOMYCIN
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

75 YEARS OF LEADERSHIP
HOARD'S DAIRYMAN
FOUNDED IN 1885

Good cows pay well for extra grain

Cheap as grain is today, cows capable of high production should be getting all they can eat. Goals may surprise you.

by Norman Reeder

ENERGY FOR PRODUCTION is what cows need. Unfortunately, rule of thumb feeding results in low producers getting too much grain and in the best cows being underfed.

DAIRYMEN ought to be shooting for herd averages close to 25,000 pounds of milk per cow," says C. F. Huffman, the slightly-built, modest, but bold-thinking Michigan State University scientist whose research in nutrition of dairy cows has commanded world-wide attention.

"It is probable that a considerable number of cows in all breeds could be producing between 20,000 and 25,000 pounds of milk a year if they were fed up to their full capacity to produce," he says. "Most of our real good cows today are underfed. Feeding for full production would be much more profitable."

All good dairy farmers know the high-producing cow is the high-profit-maker. It is no news to the dairy farmer of 1960 that a cow producing 14,000 of milk is twice as profitable as a cow producing 10,000 pounds, and three times as profitable as the 7,000-pound cow. Or, put another way, 18 cows averaging 13,000 pounds return as much net income as 54 cows averaging 7,000 pounds milk.

"But how many realize," Dr. Huffman asks, "that the cow with a production record of 25,000 pounds is three or four times as profitable as the 14,000-pound cow?" Often it is assumed such a cow is some sort of freak. And to make such a record she must have been pampered and stuffed with rare and expensive feeds which cost more than her milk was worth.

C. F. Huffman

"We have found no way to get maximum production — and profit — from high-producing cows except with liberal amounts of grain."

The truth is, with a herd producing 25,000 pounds of milk per cow, returns over feed cost would be $1,000 to $1,500 a cow instead of the $350 to $400 return expected from a 14,000-pound herd. These high figures are taken from actual reports on feed cost and returns from milk sales on high-record cows. Feeds were those available to any dairyman, a large portion home-grown.

"Our best cows pay no attention to the law of diminishing returns," Huffman says. "They keep right on paying off in extra milk for all the good feed we can get them to eat. Only their appetites put a limit to their ability to make milk profitably."

Neither do these 25,000-pound cows know they are supposed to "burn up" after one lactation of high production.

What the Danes found . . .

For the whole story of how cows respond to expert feeding and care, Huffman likes to point to a recent two-year experiment sponsored by the Danish government.

For this experiment they selected 11 cows with average production of 607 pounds butterfat. These cows were handled by expert Danish cowmen on a schedule of four-times-a-day milking with grain fed at milking time. Each cow was fed according to her production and appetite.

One cow reached a peak of 110 pounds of milk a day. At that time she was getting 30 pounds of grass silage, 50 pounds of beet top silage, and 7 pounds of hay, plus 40 pounds of concentrates a day. The concentrates included barley, oats, bran, malt sprouts, soybean meal, cottonseed meal, sunflower cake, coconut cake, and molasses.

Despite the fact this cow consumed a lot or roughage, only one-third of her dry matter intake was from this part of her ration. Two-thirds of her total dry matter came from the concentrate part of her ration.

22,200 pounds milk . . .

Under expert management, this group of 11 Red Dane cows produced an average of 22,200 pounds of milk, 1,031 pounds of butterfat the first year. This is 25,775 pounds of milk on a 4 per cent fat-corrected basis.

For the second year of the experiment, three of the cows were replaced, presumably for causes common to most dairy herds. Eight of the same cows were kept on. And the second year's production was still higher, an average of 23,611 pounds milk, 1,078 pounds butterfat, or 26,950 pounds of milk on a 4 per cent fat-corrected basis.

"It is obvious there was no falling off in feed efficiency when these cows were pushed for the highest possible production," Huffman commented. They did not "burn up." In the second lactation they produced even more milk — more profit.

Dr. Huffman says the potential production of the dairy cow has been calculated at 50,000 pounds of milk a year. A Brown Swiss cow has produced 43,300 pounds of 4 per cent fat-corrected milk on three-times-a-day milking. This is getting close to the theoretical limit. The record-holders in all breeds are now over 25,000 pounds of milk, 4 per cent fat-corrected basis.

Feeding is an art . . .

"Unfortunately, our dairy science has not yet shown us how to feed cows for this kind of production," Huffman says. "Feeding for top production is still an art to be learned by experience. It is best learned under the guidance of an expert cowman, a master.

"In science we have made considerable progress, but not enough. *(Turn to page 749)*

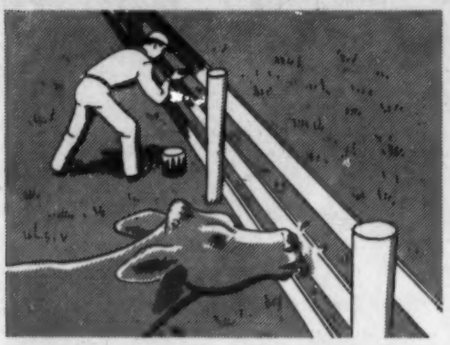
Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

CATTLE LIKE TO LICK PAINT

"Wet paint" signs don't mean a thing to cattle. Unfortunately, cattle like to lick newly-painted surfaces. Just a few licks of lead base paint are enough to kill calves or cause severe sickness in yearlings.

A University of Illinois veterinarian recommends the use of non-lead paint wherever



possible, especially on pens, stalls, and fences that enclose barnyards. Since animals may chew old paint off barns, gates, and fences, it is important to keep them away from areas where paint is peeling.

Poisoned cattle will show apparent blindness and sometimes paralysis. Severely-poisoned cattle may show weakness, trembling, and diarrhea.

Prompt diagnosis and treatment will help save poisoned cattle. In an emergency, a dose of Epsom salts may be helpful. While these salts are not a treatment, they prevent further absorption of lead by turning it into a lead sulphate, which the animal's system cannot absorb.

At the first sign of paint poisoning, contact your veterinarian since he can give an injection which will be an effective antidote for lead poisoning.

CLEAN UP GRAIN STORAGE

Before harvesting the 1960 grain crop, there are some things that should be done in order to cut losses.

A New Jersey entomologist recommends disposing of holdover grain or corn before the new harvest if you can. This should be done at least a month before the new crop will be put in. The walls and floors should be swept thoroughly.

To kill insects beyond the reach of your broom in cracks and crevices, spray the storage with a 2.5 per cent methoxychlor mixture. Use 2 gallons of spray mix to 1,000 square feet of surface. A 0.5 per cent pyrethrin spray is also effective.

Do the spraying two weeks before filling the bins; then sweep down again to get rid of residues and dead insects.

The new grain should be protected with methods approved by the Food and Drug Administration: Add pyrenone or pyrethrin materials to the grain as recommended on the label.

Spray or dust with premium grade melathion to get excellent protection of small grains or shelled corn for one season. Use 1 pint of premium grade malathion in 2 to 5 gallons of water on 1,000 bushels or a ½ per cent premium grade dust at the rate of 60 pounds to 1,000 bushels.

Untreated grain in storage can be treated to protect it from Indian meal moth by using ½ per cent premium grade malathion dust worked into the top 6-inch layer. The same amount can be used for 1,000 bushels.

You can always fumigate grains stored in a bin. Monthly inspection with a probe will tell if fumigation is necessary.

Use one of the many fumigants such as EDC or carbon tetrachloride and combinations of these, following label directions. If storage is not airtight on bottom and sides, you'll waste money trying to fumigate.

Covering grain with bags treated with methoxychlor helps to prevent infestation of grain moths on the surface.

CLIPPING OATS STUBBLE HELPS

Over a three-year period, Wisconsin tests have shown that clipping oats stubble in July soon after grain harvest can improve markedly the new seedings of alfalfa and red clover.

Best results were obtained when the oats stubble was clipped close to the soil surface in July soon after oat harvest. The alfalfa was improved even more when the cut trash was raked off the field. However, red clover stands and first-cutting hay yields were often reduced when the cut trash was removed, particularly if a dry August and September followed raking.

Leaving a small amount of mulch to conserve soil moisture benefits red clover, which is less tolerant to drought than alfalfa. If the cut trash is unusually heavy, it should be removed or it may smother the seedlings.

Clipping in July soon after grain harvest usually was much more beneficial than waiting to clip in late August. The latter was beneficial only when plenty of rain and soil moisture conditions prevailed.

Clipping gave even greater benefits to legume seedlings when the grain had been sprayed with a herbicide, such as 2,4-D. Apparently the legumes have a much better chance to become well established when 2,4-D damaged the top growth and thus competition from oat stubble and weeds is removed.

NATIONAL FARM SAFETY WEEK

President Eisenhower has proclaimed the week beginning July 24 as National Farm Safety Week. This year's theme is "Enjoy Farm Life — Practice Safety."

The U. S. Department of Agriculture and the National Safety Council co-sponsor National Farm Safety Week in cooperation with the state agricultural extension services, farm organizations, the farm press, radio, television, and other groups.

The accident death rate among farm families has been reduced from 63.3 deaths per 100,000 farm residents in 1950 to 54.3 in 1958. Non-fatal injuries were likewise reduced. However, it is expected this year that one farm family in four will suffer a serious injury to one of its members.

Of the 7,508 fatal farm accidents recorded in 1958, 34 per cent were the result of machinery accidents; 15 per cent by drowning; 11 per cent from firearms; 9 per cent from falls; 5 per cent from burns; 4 per cent from electrical current; and 2 per cent lightning.

One-third of the fatal accidents occurred to persons less than 20 years of age, while less than one-fourth were to people in the 40- to 59-year-old bracket.

KEEP MILK SAFE AND PURE!

What you can do:

1. When treating mastitis or other infections with antibiotic drugs, such as penicillin, discard all milk from treated cows for the period stated on the label of the drug. Follow label directions exactly, or if the drug is administered by a veterinarian, follow his advice.

2. Do not use any barn or cow sprays which are not specifically recommended for dairy uses in the labeling. Follow label directions exactly.

3. On pastures, hay, and forage crops, use only pesticides that are recommended specifically on the label for such crops. Follow label directions exactly. If you buy grain, hay, or forage get a written guaranty from the seller that they are free from illegal residues.

How do drug residues get into milk?

When a cow is treated for mastitis or other infection with an antibiotic drug such as penicillin, the drug may show up in the milk for a period varying from several hours to several days depending upon the drug and the manner of use. The drug label will state how long the milk must be discarded after treatment to assure that it is free of contamination.

How do pesticides get into milk?

Some pesticides will get into milk if they are sprayed onto the cow, or even on the walls of the dairy barn, or if they are present on the feed or forage. Make sure that any sprays used on cattle or around your dairy barn are specifically recommended on the label for dairy use. And be sure that the feed and forage you use has been treated only with pesticides recommended on the label for dairy feeds.

Be careful about cannery wastes.

Citrus pulp, pea vines, apple pomace, and other cannery wastes are frequently found to have a high concentration of pesticide residues. Do not feed such materials unless you can be sure they do not contain residues which will carry through into the milk.

A word about guaranties.

If you require a guaranty that feeds you buy are free from illegal residues it will remind the supplier of the necessity for using only permitted sprays on feed crops. Giving of a false guaranty that a product is not in violation of the Federal Food, Drug, and Cosmetic Act is in itself a violation of the Act.

Such a guaranty will not, however, relieve you of responsibility if your milk contains residues of drugs or pesticides.

U.S. Department of Health, Education, and Welfare, Food and Drug Administration, Washington 25, D.C.

Let's reduce the labor bite

Dairying has lagged behind other farm enterprises in reducing labor costs. Here is how the situation can be improved.

by Henrik Aune

PROBABLY no one is more familiar with the income situation on dairy farms than the dairy farmer himself. For several years he has been getting a relatively low price for his product. To make matters worse, the costs of those items used in producing this product are increasing from year to year.

One of these costs (labor) may be an actual cost in the form of hired help. In some cases it may be the alternative value of his own labor which could be used on some other farm enterprise or even in an occupation other than farming. In either case he is concerned about the cost of labor because this cost is exceeded only by the cost of feed in producing milk.

Dairying requires a high proportion of labor per $100 of production. For example, U.S.D.A. estimates show that 62 man hours of labor are required per $100 of production with milk cows whereas 16 man hours are required per $100 of production for hogs and beef cattle.

There has been considerable progress in increasing the output per man-hour in dairying, but this increase (85 per cent since 1940) has lagged behind that of poultry production (158 per cent since 1940) and the production of feed grains (361 per cent since 1940).

In all three cases, these changes have been influenced partly by improved breeding and management. However, because of the longer life cycle of the dairy cow, improvements through breeding come much slower in dairying than for either poultry or for crops. The introduction of labor saving devices and improved types of equipment have also had an important influence on these changes.

Why the lag in output? . . .

Three factors have contributed to this lower rate of productivity in dairying:

1. Dairying requires a large investment in buildings and equipment. This has hampered improvement in production per man-hour because many farmers hesitate to improve a facility which still is usable.

2. Existing buildings were designed for hand-labor methods and are not easily adapted to mechanical methods without a large expense. In some cases, the farmer may have felt that the money required for remodeling would give him a greater return in another part of his farm business.

3. The mechanical devices have not been available until recent years.

If the dairyman is going to increase his production per man-hour and thus increase the return for his labor, he must either make adjustments within his dairy program or get out of dairying. However, assuming the farmer wishes to stay in dairying, he has several alternatives.

One is to increase the production of his herd. This may not require a large outlay of money, but does take time to accomplish, as well as careful attention to management.

A second alternative is to remodel and enlarge an existing conventional barn.

The third is to make a major change and build a new facility.

The last two alternatives provide for having a larger herd and using more highly mechanized methods. Both of these will mean an investment of additional money.

To demonstrate the effect of some of these changes on the income of a farm as well as on the labor, feed, and capital requirements, let us consider a typical Midwest dairy farm. This farm could be located in southeastern Minnesota or in western Wisconsin. It contains 180 acres of which 125 are tillable. There are 15 acres in permanent pasture and 40 acres in roads, waste, and farmstead. A rotation of corn (grain), oats, and three years of hay and pasture crops is followed on the tillable land. The livestock program, consisting of 25 dairy cows plus replacements and 400 laying hens, is limited to this size by the feed produced on the farm. About 15 months of labor supplied by the operator and his family is required.

Boost production per cow . . .

The first alternative (to increase the level of production) is one which is often mentioned as a solution to many farmers' problems. This is an easy way to demonstrate increases in income, but is much harder to achieve in practice.

Each of the cows on the example farm produced 10,000 pounds of milk per year. We assume that by improved feeding, breeding, and management this could be increased to 12,500 pounds of milk per cow per year over a period of time. This would add about $1,600 to the net income of the farm, including the cost of additional feed. However, the cost of added capital and labor were not estimated and are not believed to be great.

Gains from boosting output per milk cow have been demonstrated repeatedly. For example, using a milk price of $3.65 per hundredweight, the labor income for 17 cows producing 12,500 pounds of milk would be the same as for 25 cows producing 10,000 pounds of milk or 47 cows producing 7,500 pounds. *(Turn to page 750)*

The author is assistant professor of agricultural industries, Southern Illinois University.

MECHANIZATION, through self-feeding arrangements for silage and hay, is one of the tools a dairyman can use to increase herd size, realize greater return for labor.

GREEN FEEDING inside in early June. Side-unloading chopper wagon is drawn up outside barn at the far end. The forage is elevated to conveyor-equipped manger for feeding.

Inside feeding year around...

... is possible when loose housing is added to stanchion barn. Al Hope provides shade, water, plenty to eat regardless of season.

NEW BARN is 70 x 140 feet, has capacity for 120 cows. Herd is fed inside steel and concrete loafing barn. Milking by shifts is done in a stanchion barn located at the rear.

WHEN Alfred Hope bought the home farm from his father a few years ago, he faced the same problem that the great majority of young dairymen face when starting out on their own. How can you expand to widen the gap between gross income and expenses? That net income margin is needed to pay off the indebtedness, as well as provide for a growing family.

This young South Haven, Mich., dairyman chose an unusual course of expansion and it has worked out remarkably well. Like most dairymen, Hope had a stanchion barn but wanted to enlarge his registered Holstein herd to up his gross income.

What to do? Add more stanchions? Go to loose housing and a milking parlor?

Hope did neither. Instead, he designed and built as an addition to his stanchion barn a 70-x-140-foot loose housing steel barn large enough to hold 120 cows and planned to milk his herd in 40-cow shifts.

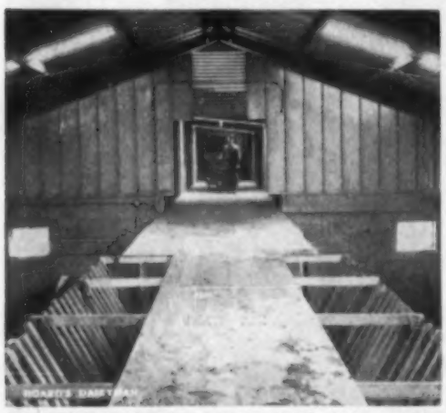
Why not a milking parlor? Hope considered one, but felt that he wanted to continue with the stanchion barn he had. To gain speed along with economy, he invented and perfected a milk-conveying system to dump his milk in the barn and convey it to the bulk tank with a flexible plastic hose.

With his housing and milking pattern set, the next problem was feeding. And here is where Hope's Aliform Farm is truly different.

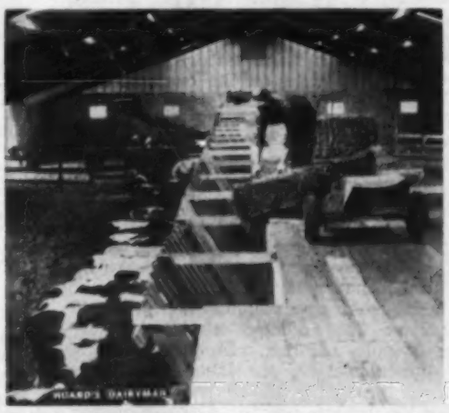
Instead of feeding outside in bunks or feeding in the stanchions, Hope feeds hay, silage,

AL HOPE, the owner of Aliform Farm, wanted comfort for his herd.

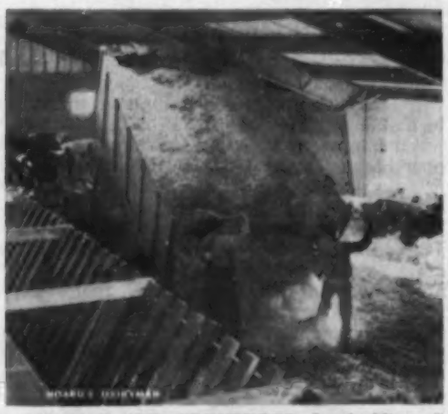
CROSS SECTION of feeding area. Passageway is available for personal use and for moving dry cows and heifers to the pens.



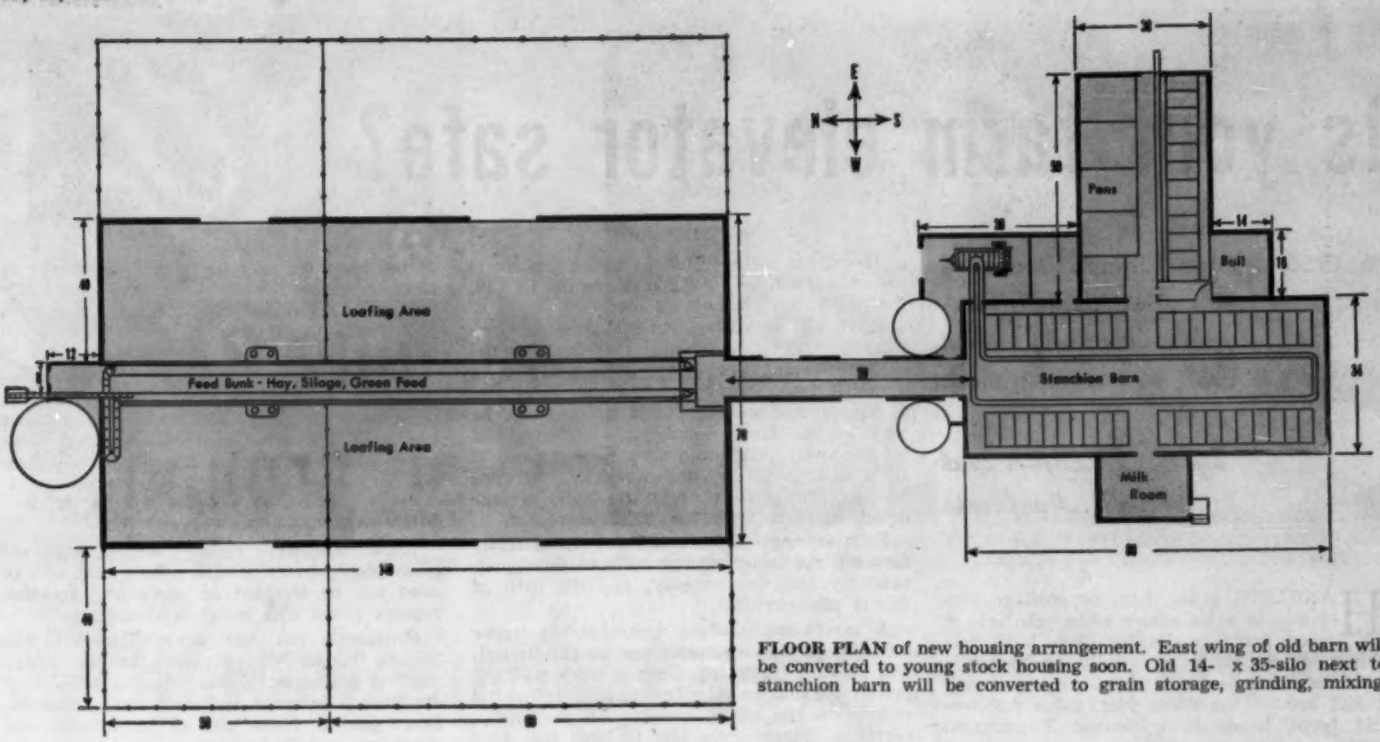
BALED HAY SUPPLY is located in loft over the stanchion barn but is easily carried into feeding area on battery-powered cart that holds 30 bales.



FEEDING HAY IS SIMPLE. Al Hope cuts twine, tosses hay down into racks. Hay dropping out of rack falls into silage or green feeding manger.



SHAVINGS ARE PREFERRED for bedding; 5 truckloads (10 tons) per week are spread in winter, 2 in summer. Areas cleaned every 8 weeks.



FLOOR PLAN of new housing arrangement. East wing of old barn will be converted to young stock housing soon. Old 14- x 35-silo next to stanchion barn will be converted to grain storage, grinding, mixing.

and green-chop inside the loose-housing barn the year around.

How is this feeding system working out?

Hoard's Dairyman has visited the farm twice, once in midwinter and once in early summer after 10 days of almost continuous rain. On each occasion the herd was clean, dry, and comfortable. The scene was one of perfect herd contentment.

Many may question how the present herd of 80 large Holsteins plus young stock can be housed in this way without a quagmire. Hope credits his results to the judicious use of inexpensive bedding material, sandy soil, and his cleaning routine.

Drainage is particularly good in that the soil next to Lake Michigan is a sandy loam. Further, the outside lots have plenty of grade away from the building. There is no concrete outside and only a 9-foot concrete base under the feeding area next to the bunks.

For his particular location he has found that shavings hauled from a local mill are less expensive than straw. Hope hauls about five truckloads or 10 tons at an average cost of $30 per week. During the summer months the unused portion is stored for other uses.

But the 32-year-old dairyman hastens to point out that baled straw may be just as good as shavings if it is in plentiful supply and low-priced. But he feels shavings are easier to handle and absorb more moisture.

The pens are cleaned out every eight weeks, primarily as a means of keeping the manure pack down to the proper level for the cows' access to the automatic bunk feeder.

Rarely has a feeding system been more carefully planned than is Hope's. Down through the center of the loose-housing barn is a 4-foot passageway. On either side are 24-inch-wide silage and green-chop bunks with a conveyor, similar to a gutter cleaner.

In winter, the silo unloader in the new 20-x-50 silo dumps fluffy silage onto one end of the conveyor which moves the silage around to the entire herd. In summer, a side-unloading forage wagon dumps green-chop onto an elevator which carries the feed into the barn and onto the conveyor.

Hay "on-the-level" . . .

Since baled hay is stored in the loft of the stanchion barn, Hope decided to keep all hay handling "on-the-level." He did this by building a so-called catwalk out over the center passageway. Now he loads 30 bales at a time on a battery-powered cart and purrs out on the catwalk, tossing down the hay into bunks at the sides of the passageway and above the silage bunks.

After a year's experience with his new set-up, how does Hope view the arrangements?

"Frankly," says the young dairyman, "I'm not interested in setting speed records, but speed is essential to increasing that spread between gross income and expenses, and this setup is the fastest I have seen. I know that our chore routine is easy and comfortable. Equally important, however, is that our cows are comfortable. They are always clean and dry. In bad weather doors are closed and four exhaust fans take moisture out of the building. In summer, they always have cool shade. At all seasons, water and feed are close by."

One of the advantages of the central feeding arrangement of his new setup is that it separates his herd into two units which have no contact with one another. This means disease in one unit can be confined to that unit. For example, every cow in one unit had pinkeye last winter, but not a single cow in the other unit had it. The separation also enables him to group his cows according to age so they get along better. Finally, he can move one unit of cows into the stanchion barn while their pen is being cleaned and have them out of his way.

The new barn has a capacity of 120 cows but one-third of the space is now used by young stock and dry cows. If and when they are moved out, the herd could be enlarged. Then, instead of the three men producing about 325,000 pounds of milk per man, the production could climb to 440,000 pounds.

Next on the calendar for cutting labor at Aliform Farm is the conversion of a 14-x-35 silo into an automatic grain handling center. A concrete floor will be poured, then an 8-foot ceiling which will support 4 grain bins. The grain will flow by gravity to an automatic grain grinding and mixing device.

THE END

MANGER VIEW shows the gutter-cleaner-type conveyor which runs all the way around feeding area. Elevator shown at extreme left delivers either silage from new silo or green feed material from chopper wagon to feed bunk.

READY TO BE MILKED, first lot of cows enters passageway from new loose-housing barn to stanchion barn. Two men milk, averaging a cow a minute with six units; other man feeds, cares for young stock, and cleans up areas.

Is your farm elevator safe?

In 1956, 5 Ohio farmers died as a result of accidents involving portable elevators, and in 1957, 498 were injured.

by B. J. Lamp and K. A. Harkness

HANDLING grain, hay, or ensilage certainly is a lot easier when you have a good portable elevator. Few farm machines as simple mechanically as elevators will contribute so much to reducing the "back work" around the farm. But, these mechanical hired hands have become a principal source of farm accidents.

Most of us recognize that machines like corn pickers, grain combines, and hay balers can be dangerous, and require cautious operation. But, we seem to take too much for granted when it comes to safety with elevators.

The survey indicated about **twice as many injuries occur with elevators** as with any of of these other, more complex machines.

Check trouble sources . . .

Several trouble sources must be recognized if you wish to avoid elevator accidents. Check yours now, while you have time. Eliminate the hazards.

Occasionally, the lower end of a typical portable elevator is lifted or raised off the ground, intentionally or unintentionally, and the machine becomes top heavy and upends.

The authors are associate professor and instructor in the agricultural engineering department, respectively, at Ohio State University.

If the upper member of the undercarriage is not restrained, by some means, to the trough, the undercarriage may collapse.

When an elevator starts to upend unintentionally, there is a natural tendency for the person working near the machine to try to stop it. A man may cling to the lower end of the trough and be pulled upward. Or, he may position himself under the discharge end of the trough, thinking that he can keep it from hitting the ground too hard. Perhaps he may grab a member of the undercarriage in an effort to keep the machine upright.

Such attempts have cost the lives of many farmers. An undercarriage collapse occurs too suddenly and unexpectedly, and the path of fall is unpredictable.

A safety track which restrains the upper member of the undercarriage to the trough will prevent collapsing. Such a track will not permit separation of the trough from the rollers on the upper member of the undercarriage. It can serve also to limit travel of the rollers along the trough, restricting the discharge height to a safe level and stopping trough at desirable height as it is lowered.

Watch hoisting cranks . . .

Most elevators are equipped with hand-operated hoisting devices for adjusting height of discharge.

While lifting or lowering these machines, it is not uncommon to lose control of the crank. When this happens, weight of the elevator will cause the crank to spin freely, unless some automatic restriction is provided. Again, the natural tendency may be to try to stop the crank—if it hasn't hit you already.

Many severe body injuries result from freely-spinning hoist cranks. A number of children have experienced permanent facial injuries while playing with hoist cranks.

Some hoists of the worm gear design will even spin out of control. Analyze the action of the hoist on your elevator. You should be able to release the crank at any point while lifting or lowering and it should not turn more than a quarter of a turn without stopping itself.

Whatever the means for locking the crank, it should be automatic. Don't rely on a pawl or some other device which must be engaged manually. Too often, manually-operated locks are located near the spinning crank and cannot be reached once you lose control.

Shield moving parts . . .

Apparently, some farmers believe relatively slow-speed power shafts, gears, and chains need not be shielded on elevators. Accident reports prove this belief is erroneous.

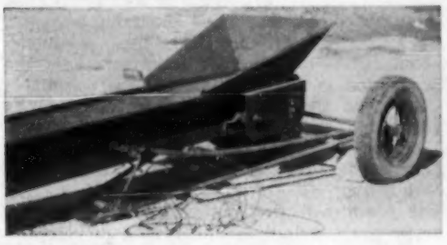
Frequently you must work adjacent to the loading hopper and exposure to the power shaft is prolonged. Getting caught in rotating shafts is a principal cause of fatal accidents. Don't gamble! Make sure all drive chains and gears are safely shielded.

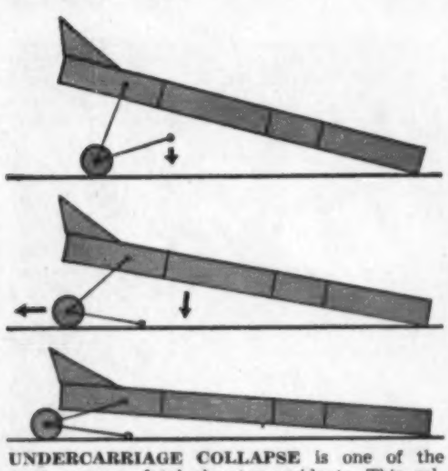
Use a power-take-off shield if your elevator is driven with a tractor. It takes less than a minute to snap a power-take-off shield in place, if kept in good shape. That minute may prevent injury to you or a member of your family.

Is there a fire hazard?

Elevators equipped with engines frequently are built with the power unit located near the loading hopper. Hay leaves and straw chaff fall on the engine, restrict ventilation, and occasionally build up around the hot exhaust pipe and muffler. The debris becomes very dry and may be ignited.

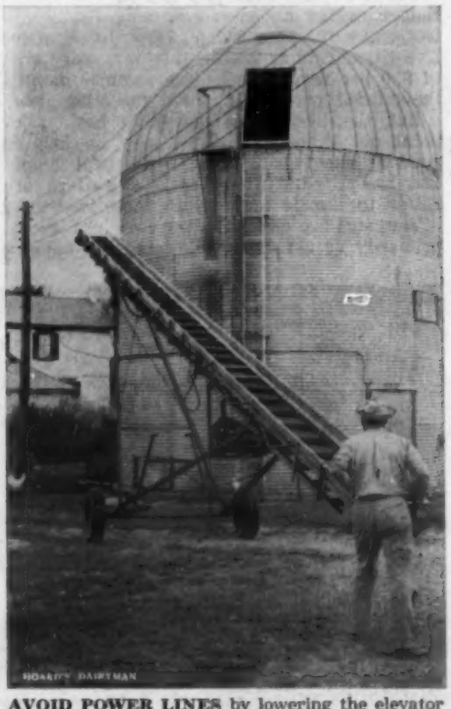
Some engines are mounted so that the exhaust is directed at the bales being conveyed. Mufflers deteriorate rather quickly on small engines and are not always replaced. Absence of a muffler, where exhaust is directed at bales, is critical. Hot *(Turn to page 759)*



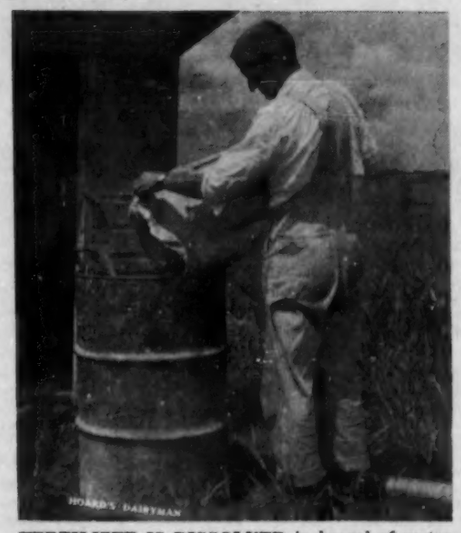


UNDERCARRIAGE COLLAPSE is one of the most common fatal elevator accidents. This collapse occurred when the machine was upended.

"PANT GRABBERS" such as these chains, pullies, and shafts can take over quickly. Shield the moving parts, especially power-take-off shafts.



AVOID POWER LINES by lowering the elevator when moving it. The metal is a perfect conductor for a killing charge of electricity from power line.



FERTILIZER IS DISSOLVED in barrel of water before being sprayed through irrigation system.

IRRIGATING TIME varies from 4 to 12 hours; depends on soil type, moisture, and temperature.

CHOICE PASTURE: 8 pounds orchard grass 2 pounds Ladino, 1 pound New Zealand white clover.

How we irrigate our dairy farms

During seasonal dry periods, sprinkler irrigation greatly increases forage yields for dairymen in Pacific Northwest.

by Vernon E. Colenbrander

SPRINKLER irrigation is the key to more forage for dairymen in the normally wet coastal areas of the Pacific Northwest. Due to the seasonal rainfall pattern, July and August precipitation averages about one inch per month. Frequently June and early September are extremely dry.

The main reason for sprinkler irrigation is to intensify productivity on small acreages. Higher yields per acre are part of the national trend in agriculture.

The sprinkler method is well suited to the soil and topography of the coastal area where surface methods are not successful. For example, half the Grade A dairy farms in Whatcom County now use sprinkler irrigation.

Because irrigation is used largely on small acreages (40-to 80-acre farms are common in western Washington and Oregon), the system is usually designed along these lines. The heart of a typical system is a 5 or 7½ horsepower electric pump coupled to a horizontal centrifugal pump with 3-inch suction and discharge. With low electrical rates, electric motors are economical.

The source of water is a shallow well, or small stream. Also, ponds for irrigation are becoming popular. The water is seldom lifted over 15 to 20 feet.

In the shallow well, a perforated wood casing 3 feet in diameter and 8 feet or 16 feet in length is put down with a concrete curbing above. The total depth of a shallow well seldom exceeds 30 or 40 feet.

In case of water from small streams, the intake is merely dropped in a deep hole nearest the irrigation pipeline. With a portable intake and gasoline motor moved from place to place on a stream, most of the main line can be eliminated.

The main line of varying length is a 3-inch aluminum pipe in 40-foot sections. The total length depends on the location of pump and layout of farm.

The sprinkler line, with 16 sprinklers of 7½ to 9 gallons per minute capacity is about 640 feet long. This line also uses 3-inch aluminum pipe. Sprinklers are mounted on a short riser. Occasionally, larger sprinklers, up to 12 gallons are used. With this set-up, about one acre can be covered at one setting.

Many larger systems can be seen at work on larger acreages. These, of course, use more horsepower, larger pumps, longer lines, and bigger pipes with many more sprinklers.

Cost of system . . .

Since no two systems are quite alike, cost is variable. The price range is between $2,000 to $3,000 for the typical system described. Larger systems cost much more. A 40-foot section of pipe with coupling costs about $22. A sprinkler with riser, $6; the pump and single-phase electric motor, $800 to $900; well complete, $350 or more; plus installation of a power line.

A three-phase electric motor will reduce the pump and motor cost greatly, but the power line price will be greater. Although electrical bills are quite high for a few summer months, electric motors have proven economical compared to gasoline motors.

With rainfall averaging only one inch a month in July and August, considerable irrigation is necessary. Frequently, water must be put on in early June and continued into early September. No summer is average, so occasionally the system may be run day and night during the summer months. With increased rainfall the irrigation season may be cut to only six weeks.

The setting or length of time an area is irrigated depends on many factors: Moisture, type of soil and sub-soil, temperature, and desired depth of moisture. The length of time the system is set on one area may range from as little as 4 to as many as 12 hours. Most experienced irrigators only water as much forage land as can be kept in top growing condition. This may only be about 50 per cent of the tillable acres. Frequently, only the pasture land is irrigated.

How often is the same area covered in a season? It may vary from two to five times. Most systems are designed to irrigate every 18 to 20 days.

As can be expected, with so many methods employed, the results are never quite the same. Some dairymen claim forage yields may be doubled during the dry season, which would mean an increase of a third, to a half for the season.

Of course, with added water, increased fertilization is a must. Normally, a heavy application of barnyard manure has been spread before the grass begins to grow, as well as a small supplemental treatment of nitrogen and up to 60 pounds of available phosphate and potash. With the first irrigation water, additional nitrogen is added.

Frequently, nitrogen is distributed through the system during the last few minutes of the set to prevent leaching. More than 30 pounds of available nitrogen and up to 90 units can be added during the irrigation season. Limited spring application of nitrogen, with added amounts in the summer season, not only gives good growth response, but helps maintain the legumes in the grass stand. A heavy nitrogen application too early tends to increase the grass, choking out the legumes.

To pay the cost of irrigating, high-producing plant species are used in the legume grass mixture for pasture, such as Ladino clover and orchard grass. Alsike and New Zealand are also used for pasturing. Alfalfa is used for silage and hay. Other grasses may be timothy and fescues.

How much water?

Over-irrigating is a wasteful fault with the sprinkler method. A new hand has much to learn. No set rule can apply because of differences in soil conditions and weather. How much water to apply? It may be necessary to irrigate only 4 hours, then again, 12 or more. Water must be applied at the right time. It is extremely difficult to say when a certain field should be watered. Waiting too long will lower the amount of lush forage. Getting the most out of sprinkler irrigation is an art.

THE END

The author is a county agent specializing in dairy, Whatcom County, Washington.

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You can diagnose corn deficiencies

Every corn grower should be able to recognize the danger signs that mean lower yields. If hunger signs appear, soil is badly depleted.

by K. C. Berger

UNLESS your corn, early in the season, shows some of the deficiencies described here, chances are that it would be too late to do much about them this year, but certainly they give the information needed for intelligent fertilizer use for next year.

If the deficiency shows up when you are still cultivating the corn, usually it can be corrected. This is particularly true for nitrogen deficiency and even for phosphorus and potassium. Nitrogen deficiency is the most prevalent of all deficiencies in some of our corn-growing areas.

In early stages of growth, nitrogen deficiency appears as a light yellowish-green color of the corn leaves in contrast to the dark, healthy green of the normal plants. This nitrogen deficiency can be corrected by side dressing. Special nitrogen testers for corn can help with the diagnoses.

By the time the corn has reached a knee-high stage, it needs about three pounds of nitrogen per acre per day. It is at this stage that many cornfields run out of nitrogen. When the deficiency is severe, the symptom appears as yellowing at the tips of the lower leaves. Gradually this spreads down the midribs of the lower leaves and reaches up higher on the plant.

The lowest leaf is first affected, then as the deficiency is more severe, those up higher also become affected. The whole plant turns a light yellowish-green and if the plant runs out of nitrogen at the critical time of ear development, the ears are small, protein content is very low, and kernels at the tips do not fill out.

If nitrogen deficiency is very severe, ears will not be formed at all and blank stalks will occur. Very severe phosphorus deficiencies also cause blank stalks, but these are rarely found, particularly where phosphate generally is applied in the starter fertilizer.

Phosphorus deficiencies usually appear when the plants are very young. The symptom is a reddish-purple color on the leaves. This is more pronounced on the underside of the leaf and occurs on the lower leaves as does nitrogen deficiency. A lack of phosphorus causes poor root development, small stalk size, and a poor ear set. Stalks are weak and spindly, and are short, particularly in the early part of the season if the phosphorus deficiency is severe.

Potash deficiency shows up later in the stage of growth. It also appears on the lower leaves. This is in contrast with the nitrogen deficiency, which shows up in the center of the leaves. With potash deficiency, the plant may have a dark green color except for the firing at the outside of the lower leaves. While a lack of potash may not have as much effect on the size of the ears as does either phosphate or nitrogen shortage, kernels at the tips do not develop and the nubbins are chaffy.

The author is a professor of soils, University of Wisconsin.

Need for trace elements . . .

In recent years, trace element deficiencies also have occurred on many of our corn soils. These are found particularly on our low-lying black soils; either peats or marsh border soils. A severe copper shortage shows up in the young plants as a drying at the tips of the plant and the leaves twist and dry. In many cases where the deficiency is not quite so severe, a browning of the edge of the upper leaves occurs. This is different for potassium deficiency, which occurs at the lower part of the plant.

On many fields of similar soils, zinc deficiency also occurs. This shows up when the plant is very young in a severely-stunted plant. The tips of the leaves are a whitish-green and sometimes are streaked. The deficiency occurs first in the upper part of the plant. Many of the plants die when they are 6 to 12 inches high and eventually disappear, while some of the remainder make recovery.

Zinc and copper deficiencies are corrected by putting these materials in the starter fertilizer. They should be used at the rate of 2 pounds of copper oxide and 10 pounds of zinc sulfate per acre in the starter fertilizer.

On well-fertilized fields with high plant population, blank stalks and barren ears may be an indication of boron deficiency. If this condition shows up, about 10 pounds per acre of borax should be applied to the next crop. It should be applied only as a side dressing, at least eight inches away from the corn at the time of the first or second cultivation. Borax should never be applied with the starter fertilizer because it can severely injure corn.

Highly acid soil seriously affects the uptake of plant food elements and causes deficiency symptoms to appear, even though the soil has been fertilized. Acid soil also causes poor root growth and, in some cases, decay in lower part of root.

A soil test is, of course, the best way of checking for soil acidity. If the soil is acid, it should be corrected by adequate liming. Lime also is a source of calcium and magnesium . . . two important plant food elements.

In checking cornfields for trouble signs, it is a good idea to be thorough. First, look at the general appearance of the field and compare with a normal, healthy field. Then pull plants up here and there and inspect the roots. If the roots are all heavily pruned, rootworm may be the cause. This is corrected by application of insecticide with the seed at the time of planting.

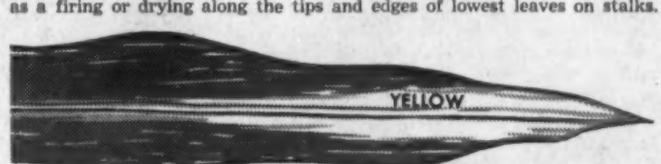
If the roots are pruned near the top and are strong and healthy down lower, it is an indication of pruning by cultivation.

Slice the stalks to look for corn borers or for disease symptoms. At harvest see how ears are filled.

When hunger signs appear, the soil is badly depleted but, remember, even such seriously depleted soil can be restored and yields raised to profitable levels.

PHOSPHATE DEFICIENCY usually appears when plants are young. The symptom is a reddish-purple color along outer edges of the leaves.

POTASH DEFICIENCY shows up in later stages of growth. It appears as a firing or drying along the tips and edges of lowest leaves on stalks.



NITROGEN HUNGER causes a yellowing at tips of lower leaves that gradually spreads down the midribs and reaches up higher on the plant.

HEALTHY LEAVES shine with a rich, dark-green color when all of the critical elements needed are present in the soil in the correct amounts.

Good cows pay well . . .

(Continued from page 741)

We have learned the needs of the cow for protein, calcium, phosphorus, sodium, cobalt, iodine, iron, and copper, and the need for vitamins A and D. We have explored the work of microbes in the paunch and learned that these bugs synthesize vitamins of the B complex.

"We have learned, too, about the production of high-quality proteins in the cow's digestive system. When we look back to the production of herds on test 25 or 30 years ago and compare the herds of today we can all take considerable pride.

"But we scientists haven't yet learned how to evaluate the productive energy of forages. We can't tell how much milk and meat we can get from a given forage. We know there is a lot of difference, but we can cover up much of the difference between the very poor and the excellent forage by liberal grain feeding."

Pasture alone, according to research, is capable of producing 50 pounds of milk a day. This takes a good cow and excellent pasture consisting of young, growing crops in such abundance that a cow can pick all she can eat of the most nutritious tips of the plants. "Such pastures are seldom seen in this country except for a relatively few days out of the year," is Dr. Huffman's comment.

He points out this is a grain-growing country. Grain is cheap and abundant. With grain at 2 cents a pound and milk worth 4 cents a pound, we could afford to trade grain for milk on a pound-for-pound basis, a pound of grain for a pound of milk.

Misleading rule of thumb . . .

The worst stumbling block to wise grain feeding, according to Huffman, is that old rule of thumb, feed 1 pound of grain for each 4 pounds of milk. This is a very misleading guide.

With cows not capable of high production or with cows on very good roughage, including grainy corn silage, this rule can lead to wasteful over-feeding. Just as readily, **it can lead to under-feeding the really good cow.**

Don Hillman of the Michigan State University dairy department reports that a well-bred herd in Michigan produced very poorly last year as a result of the owner's following the 1-to-4 rule. His roughage was poor. In early lactation cows giving 60 pounds of milk a day got 15 pounds of grain, but this wasn't enough with poor roughage. (Cows in the Danish experiment got at least four times as much productive energy in their feed.) Later in the lactation, on the same grain feeding, the cows in this farm herd began to put fat on their backs, but produced very little milk.

This dairyman had dried up his cows by starving them in early lactation.

"Most dairymen could feed a lot more grain at a profit if they fed it expertly," Huffman says. He has said, repeatedly, that **cow feeding is an art.** It is not a simple matter of ladling out an extra measure of grain to each cow. If you do that, the inherently low producers will eat their heads off and get fat. High-producing cows may go off-feed, lose production and flesh.

Expert cowmen feed grain to high-producing cows before they freshen, on the day they freshen, and thereafter up to the cow's capacity to take feed and turn it into milk, according to Huffman. Cows in the Michigan State University herd get 12 pounds of grain the day they freshen. Their need for extra energy is very high at this time, he explains.

The rule of an expert feeder is to increase grain as long as the cow responds with extra milk or until her appetite lags. The expert senses when to ease off on grain and let the cow catch up. He makes sure she is eager to eat at each feeding.

Only by adding energy to the cow's ration, up to her limit of response with more milk, can anyone tell which cows are the inherently highest producers. If all cows were fed this way, selecting bulls for artificial breeding studs would be far more sure than it is today. Progress in breeding would take a long leap forward, this scientist says.

Some cows respond, only a little or not at all to extra grain feeding. Cows which do not respond should be cutback until you find the rate at which intake pays off in milk.

With good-quality hay or grass silage, a cow may produce 30 to 40 pounds of milk without any grain. With a full-feed of good hay and some good corn silage, rich in corn grain, a cow may produce 50 pounds of milk without being fed any concentrate.

Huffman advises taking grain away from cows which do not pay for it and giving it to the cows which can turn it into extra milk. And don't hold back on the grain for these good producers until their appetites or results at the milk pail signal "stop."

THE END.

The family cat had just presented the household with a litter of kittens. Junior went down into the cellar to inspect them, and shortly his mother heard a medley of howls.

"Don't hurt the kittens, Dear," she called out.

"I'm not, Mom," the youngster replied. "I'm carrying 'em real careful — by their stems."

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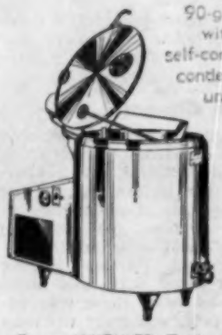

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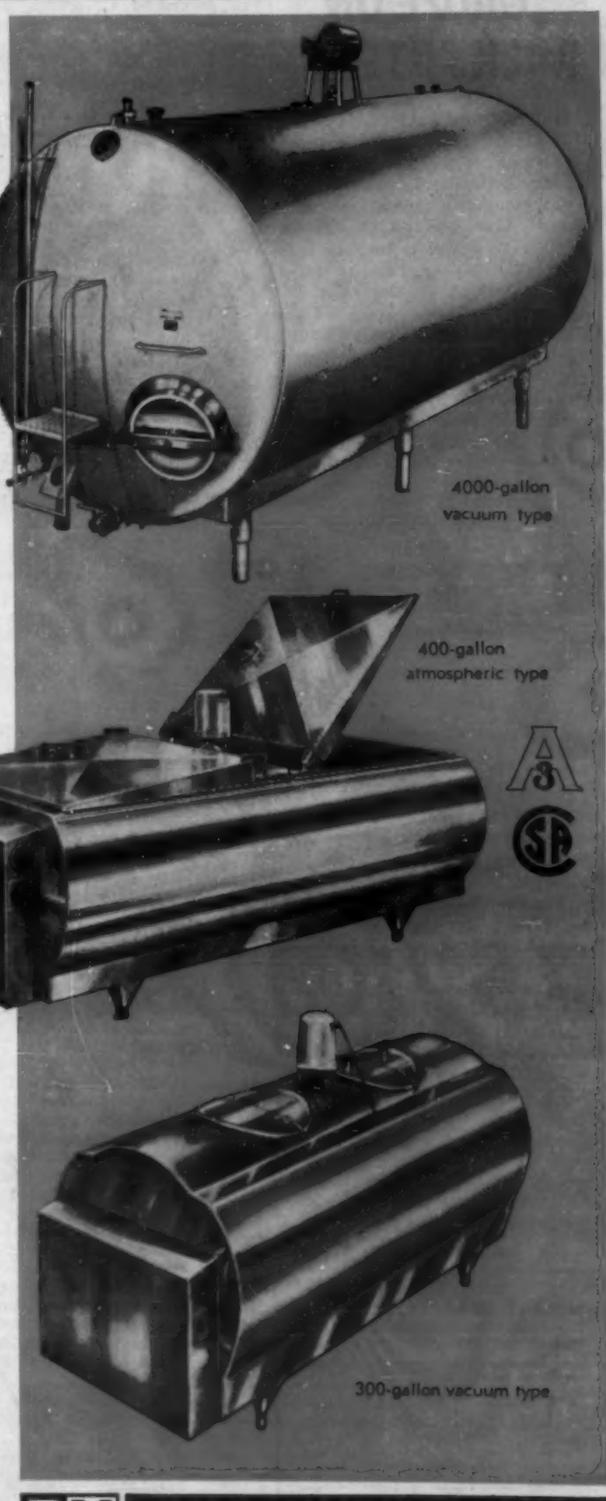

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Let's reduce the labor bite

(Continued from page 743)

Another is to expand and remodel the existing conventional barn, putting in a gutter cleaner, silo unloader, and a third milker unit. In many cases the farmer must change his whole farming system to get full benefit of some certain changes.

In this case it meant a different crop rotation. The corn is harvested for silage instead of grain. The oats is left in the rotation to aid in establishing seedlings of grass and legume mixtures and to provide straw for bedding.

The net effect is that all farm grains for the dairy herd must be purchased. Of course, whether the farm grains are raised or purchased their costs must be entered in the farm records at market value, but the fact that the grains are bought emphasizes the need for high production per cow.

With these changes in rotation and facility the resulting herd size is 37 cows. The number is limited by the forage available. The net addition to income is about $825 after considering the annual cost of added facilities (total investment — $6,000), added labor (389 hours), and purchased feed (equivalent to 2,220 bushels of corn).

This sort of change might be suited for those farmers whose buildings and equipment are in good condition and are easily remodeled. Many farmers also prefer the individual care and attention that is possible under a conventional barn plan.

Comparison of alternative adjustments in dairying

Alternative	No. of cows	Income over direct costs	Change in income	Labor load	Change in labor	Added capital	Labor per cow
		$	$	hrs.	hrs.	$	hrs.
Present program	25	6,444	—	3,795	—	—	90
1. Improved breeding and management	25	8,056	1,612	3,795	—	—	90
2. Remodel present facility and buy grain	37	7,270	826	4,184	389	6,000	69
3a. New facility and buy both grain and forage	60	9,852	3,408	4,182	387	11,000	45
3b. New facility, buy grain, but buy land to provide forage	48	8,849	2,405	4,164	369	8,800 bldg. 7,000 land	45

Income over direct costs does not include interest on investment, depreciation, or real estate taxes. A price of $3.65 per hundred for milk was assumed.

Replace obsolete buildings . . .

However, other farmers may have buildings that are out of date and of little value. If they wish to continue in the dairy business a logical alternative is to develop a completely new facility. This could include a milk room and milking parlor, as well as loafing sheds and storage for hay and silage. These should be developed to save labor and at the same time assure good management practices.

To estimate the results under this plan it is assumed that the same amount of labor is available as that needed under the second alternative in which existing buildings are remodeled. With the new facilities there are considerable savings in labor which can be used on a large herd. However, the larger herd will require more forage than was produced under the second alternative.

If this added forage is purchased, there will be 60 cows in the herd. If the farmer purchases additional land to produce this forage he will need an additional 40 acres of tillable land. The added labor to harvest forage would reduce the herd to 48 cows if the same total labor is used as in the second alternative.

When the forage is purchased the net addition to income over the original plan would be $3,408. The added labor is 387 hours. The net capital investment would be about $11,000. It would be necessary to purchase 183 tons of hay, 53 tons of straw for bedding, and 3,600 bushels of corn (or grain equivalent).

If the farmer purchased additional land to provide the needed forage the net addition to income would be $2,405. The added labor is 369 hours. The added capital for buildings and equipment is $8,800. The annual cost of the added land, considering interest and real estate taxes, is $400. About 2,700 bushels of corn and 22 tons of straw must be purchased.

The two plans under the third alternative indicate an opportunity for substantial increases in income. Thus, it appears that the real advantage lies in developing a larger program using a facility which will minimize the labor required per cow. However, the availability of capital and land, as well as the necessary managerial skills will limit the number of farmers that will be able to adjust their dairy programs in this way.

Each farm different . . .

This discussion has been oriented toward an individual farmer's adjustment possibilities. By increasing production he can improve his income. However, if all farmers increase production, the resulting price drop could wipe out the advantage gained. Farmers always have been faced with this problem. In most cases those who adjust their programs early will reap the benefit of the new technologies.

Therefore, it is important that each farmer evaluate carefully the alternatives he has available, considering his managerial skills and available capital. Those dairymen who are able to make the major changes and stay in dairying will no doubt find it quite profitable. But, those with limited opportunities to expand their dairy programs may find it more profitable to shift to some other enterprise.

THE END

It was baking day and the busy farm wife was being assisted by her 10-year-old daughter.

"Paula," she said, "open the oven and see if that coffee cake is baked. Just stick in a knife and see if it comes out clean."

Paula returned in a few minutes and said, "Mom, the knife came out so clean, I stuck in all the other dirty knives."

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HOARD'S DAIRYMAN
Circulation Department
FORT ATKINSON, WISCONSIN

The ovaries . . .

. . . are the esssential organs of reproduction. Here is how eggs are produced and how two hormones affect reproductive process.

by E. A. Woelffer, D.V.M.

CONTINUING our discussion of the reproductive organs of the cow, we briefly describe here the ovaries, list their function, and point out some abnormal activities which may interfere with getting cows with calf.

Two in number, ovaries are bean-shaped. In the mature cow they are about 1½ inches in length, 1 inch wide, and about ½ inch thick. In heifers they are somewhat smaller. Located in the abdominal cavity, they are attached to the dorsal (upper) wall or back and lie near the middle at each side of the pelvic inlet.

Egg is released . . .

Ovaries are the essential organs of reproduction in the female for this is where the eggs or ova are produced. The ovum develops in a small chamber, known as a Graafian follicle (a blister-like structure) that measures about ⅝ inch in diameter. As the follicle matures, it softens, eventually ruptures and releases the egg.

The cavity of the follicle then becomes filled with a mass of cells which forms an organized blood clot. It is known as the corpus hemorrhagicum. The structure soon changes in composition and color. A liver-like substance known as the corpus luteum, or yellow body, forms.

This is a rather simple and brief explanation of one of the normal activities of the ovaries. Actually, their activity is much more complicated and involved, for they are a part of the endocrine system of which the pituitary gland is the master gland.

Two hormones produced . . .

There are two natural hormones of the ovary. They are known as the estrogenic and luteal hormones.

As the period of heat appears a follicle on one ovary develops. (Occasionally more than one follicle develops on one or both ovaries.) The follicle, which is filled with a watery fluid, advances to maturity and ruptures, usually on the average of about 12 to 13 hours after the end of heat.

Within the embryonic follicle are some undeveloped cells and the egg. The follicle develops, the cells grow and mature as does also the egg. Tiny cells, called internal theca cells, secrete the heat-producing hormone estradiol.

A crater in the ovary, formed by the rupture of the follicle as pointed out above, becomes filled with tissue, the corpus luteum. Under the influence of the luteotropic hormone of the interior pituitary gland, the corpus luteum secretes a hormone known as progesterone, which has several functions:

1. It aids in the passage of the egg through the oviduct into the uterus.
2. It stimulates growth of glands in the endometrium (inner lining) of the uterus for the attachment of the fertilized egg and embryo.
3. It helps maintain pregnancy.

Normally a cow does not show heat when the corpus luteum is actively producing progesterone. The reason is because progesterone and estradiol are antagonistic, much like the relationship between the accelerator and brake of an automobile.

When progesterone is active the brake is on. If the female was not bred or serviced during the heat period, the corpus luteum remains active until about the 16th or 18th day following heat. Progesterone secretion ceases at this time. As soon as the brake is off (progesterone isn't secreted) a follicle begins to develop, estrogenic substance is secreted, and the cow comes in heat.

If the cow becomes pregnant, the corpus luteum remains. It continues to secrete progesterone and, except under abnormal conditions, the cow does not return to heat during the gestation period.

As with all organs and tissues of the body, hormones of the ovaries are often interfered with or falter in their normal activity.

Sometimes the follicle fails to rupture. It continues to grow, often becoming excessively large. The cow either comes in heat at shorter than normal intervals or does not show estrus symptoms at all.

At other times the corpus luteum, or yellow body, is retained. The retained corpus luteum usually is associated with absorbed fetus, foreign material such as pus in the uterus, mummified fetus, bred cows under general stress, and so forth. A corpus luteum is also sometimes retained when cows are nursing calves over a long period.

Occasionally ovaries become inactive due primarily to endocrine dysfunction, possibly brought about by stress conditions. Slight or extensive adhesions involve one or both of the ovaries which may or may not affect fertilization. Occasionally one or both ovaries are missing. Usually ovarian absence is associated with freemartins. Veterinarians skilled in diagnosing reproductive abnormalities are able to identify the conditions and apply proper treatment.

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FEEDING

Why the summer slump?

The drop in production usually is blamed on heat and flies, although the main cause may be underfeeding.

by J. K. Loosli

THE pasture season is the time for cheap milk production in most sections of the country because grass is less expensive than stored or purchased feeds. There are exceptions, of course, where pasture is not available, but our national milk production is larger in summer than in fall and winter. As a result, in many areas the market price paid for milk is lowest in the pasture season.

When we look at the milk production of individual cows the picture is quite different. Spring-freshening cows in New York State produce about 1,200 pounds less milk than fall-freshening cows. There may be more difference in southern states.

This is an average for DHIA records and is, therefore, a true picture of what is happening today. It may not apply to the better fed herds. There are still too many dairymen, however, who reap the combination of low production plus low milk prices in summer.

This situation can be changed. To have more fall-freshening cows would help, but it takes time to adjust calving dates. It is much easier to correct the lowered summer production caused by underfeeding.

Everyone knows that cows usually increase in milk production when they are first turned to abundant early pasture. Especially those cows that freshen after March or April will respond with high milk yields.

When abundant pasture is provided and it is not permitted to become too mature, spring-freshening cows will still be producing well in the fall and throughout much of the winter.

Rotational grazing and mowing the grazed fields to control weeds and remove over-ripe forage aids pasture recovery and maintains high quality feed. Of course, the kinds of legume or grasses grown markedly influence forage quality and there are important differences in various regions of the country.

Grazing cows should have ample pasture night and day. In hot weather cows will spend more time grazing at night or early in the morning than in the daytime. The aim should be to provide plenty of high-quality forage. If the cows are unable to get enough feed from pasture, they should be given fresh cut forage, hay, or silage.

Grain feeding recommended . .

Grain should be adjusted to the amount and quality of forage available. With early pasture cows will eat little grain, but the amount should be increased as the amount or value of the forage decreases.

Even dry cows may need some grain to get them into proper condition for high production when they calve in early fall. Unless pasture is excellent, grain should be fed as it is in the winter.

Rather than feeding a light, bulky concentrate mixture in limited amounts during hot summer weather, liberal amounts of a high energy concentrate may give better results.

In summer tests in Texas cows gave more milk and suffered less from the heat on a heavy grain mixture high in energy and with restricted bulky feeds, than on usual rations. Thus, high corn rations previously thought to be too hot for heavy feeding in summer are actually cooler feeds for cattle than roughage alone.

Until recently it was thought that Holstein cows would not stand the summer heat in the southern states and thus would not produce as well as Jerseys. Experience and research have shown larger differences among cows within a breed than between the breeds.

Adequate feeding combined with good management allows good cows of any of the dairy breeds to produce efficiently in summer temperatures found in the United States. Yet some cows suffer more than others and selection for production is desirable.

Water is as important as feed for all cattle and is especially important for milking cows. About four gallons of water are needed for each gallon of milk produced, above that needed for maintenance. More water is needed in hot weather.

Proper control of flies eliminates a big annoying factor and helps cattle do better. Shade is helpful in reducing heat stress.

If your cows have slumped in production this month it is not too late to improve feeding and management. Spring-freshening cows will increase in production with better feeding and care from now on. Cows that are dry will produce better in the fall if you keep them in good condition now.

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DOW

Are larger heifers the best producers?

This Michigan study shows that heifers can be bred earlier than normally recommended if they are fed well. An extra half lactation can be gained.

by R. H. Miller

HOW important is a heifer's size to her production in the first lactation? At what age should heifers first freshen?

A Michigan study reveals that the older and larger heifers at first calving may not be as profitable as commonly believed.

We studied Michigan DHIA records of 4,600 Holstein, 1,000 Guernsey, and 500 Jersey heifers to find out how much influence size at first calving, apart from age, has on milk production. An attempt was also made to determine whether any of the effect is due to genetic causes.

Milk produced in 305 days increased about 200 pounds with each increase of 100 pounds in weight at calving for heifers of the same age. However, this increase was not continuous; production response to level of development appeared to reach a maximum at weights 300 to 400 pounds above the breed average for the age.

Since larger heifers require more feed, these may not be as desirable as has been believed in the past. This is especially clear when we consider that more time is usually required to grow larger heifers. The effects of age alone were responsible for only about 75 pounds more milk for each additional month of age at calving.

The Holstein heifers studied freshened at an average of 29 months of age, weighing 1,120 pounds; the Guernseys at 29 months weighing 930 pounds; and the Jerseys at 27 months weighing 790 pounds. As far as economical first lactation production is concerned, it seems desirable to have heifers freshen earlier, at perhaps somewhat smaller sizes.

Heifers bred at 16 months of age and freshening at about 25 months would compete favorably with heifers bred at ages several months older, especially if the feeding program is designed to stimulate rapid growth with the aim of breeding earlier.

Our results showed that Holsteins calving at 900 to 1,000 pounds could be expected to produce only 320 pounds less in the first lactation than the average production of all heifers (9,900).

This study did not consider other factors such as calving difficulties in smaller heifers and the effect of early calving on the length of time cows remained in the herd. Other work has shown that it is possible to feed heifers heavily to permit earlier breeding, and that early breeding does not necessarily lead to stunting of growth.

The most important factors responsible for the effect of size on production were found to be environmental causes, such as the level of nutrition during the growth period. However, there were indications that genes which cause the heifer to grow well also cause her to produce well.

The Michigan work indicates that we may be increasing the size of our cattle as we select for increased milk production. It is still not clear how much attention we need to pay to a heifer's weight in deciding whether or not to save a calf from her.

It does seem certain that we need to breed heifers earlier, even if it means feeding a little more heavily than we do at present.

This could result in an increase of as much as one-half on a lactation in the average time cows remain in the herd. Such an increase apparently can be achieved with relatively little loss in net returns from first lactation milk production.

Since sire proofs are often made on the basis of production in the first lactation of a bull's daughter, earlier breeding also will permit more rapid evaluation of transmitting abilities of sires for production.

The author is a member of the dairy husbandry department at Michigan State University.

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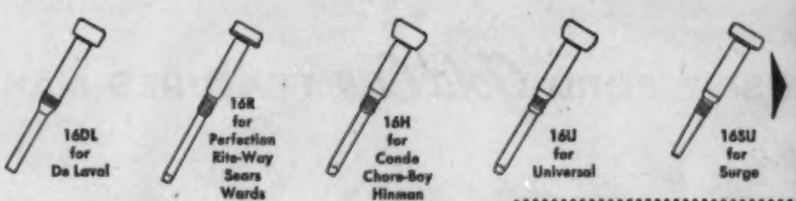

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1st, 1959 National Corn Picking Contest, 2-row pickers. The 2-row Ford corn picker harvested 8 bushels more per acre than the average of all other 2-row pickers entered... 4 bushels more per acre than the nearest competitor.

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Minnesota ANN ZAWISTOWSKI

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Ventilation ducts not only serve their purpose but are constructed large enough so baled shavings can be dropped from the storage into the pen below when ventilation fan (located in duct between floors) is removed. Baled shavings opening in duct is closed when ventilation system is operating.

CHARLES L. STRATTON
New Hampshire

NO DEAD FURROWS

To eliminate the dead furrow when plowing, Frank Imhoff, Washington, uses a two-way plow. Without the dead furrow usually found in most fields, he finds it easier to plant and harvest crops. It also eliminates a ditch in which irrigation water stands, and it saves time when plowing by not having to run the ends.

PREVENTS RUSTING

To prevent rusting of bolts on spare tires (underneath or on sides of trucks), slip a short length of heater hose over exposed end of bolt. This assures easy removal whenever the spare tire is needed.

Illinois MRS. HARRY E. KLAUS

LOAFING BARN FAN

Wilmer House, Maryland, had a problem with condensation on the ceiling of his loafing barn until he installed a large, 36-inch fan in one end. This fan runs almost continuously, pulling air from the outside and forcing it through the loose-housing barn.

SAVES FRUIT TREES AND BERRIES

We wrap aluminum foil around the trunks of fruit trees; it is left on year around. It discourages rabbits and prevents sunscald.

We also tie strips of aluminum foil to sticks set in rows among the raspberries. The bright reflection from the sun and rustling of the wind scares pests.

Minnesota MRS. LEO KRITZECK

OUTSIDE COMPRESSOR

Any number of milk houses are too small for complying with the space needed for a bulk milk cooler. There is a strong possibility that your milk house is large enough if you install the compressor outside. Any number of farmers have used this system and have been very much satisfied with the results. You will note that a small lean-to roof and side is built up to the corner of the milk house and barn and the compressor is put on a base of concrete blocks.

Before enlarging your milk house, check this possibility.

Meatier hogs on the way

Measuring back-fat is an accurate way of selecting for leanness. Lean pigs gain faster than their fatter mates.

by F. J. Giesler

SELECTING breeding stock on the basis of back-fat thickness is highly effective in changing carcass composition. At least tests conducted at the United States Department of Agriculture research center at Beltsville indicate this to be the case. Back-fat thickness was measured when the hogs weighed 175 pounds. With Durocs, it averaged 1.49 inches. By the fourth generation it increased 21 per cent in those hogs specifically bred for higher back-fat.

In tests involving Yorkshires, back-fat thickness averaged 1.26 inches and increased 5 per cent in the second generation.

Besides increasing in back-fat thickness, the Durocs steadily decreased in weaning weight and in postweaning growth rate. The pigs averaged 29.7 pounds at weaning and made average daily gains of 1.47 pounds from weaning to 175 pounds.

The leaner Durocs, on the other hand, showed steady increases in both of these traits. They averaged 35.2 pounds at weaning and gained an average of 1.58 pounds daily from weaning to probing (175 pounds).

H. O. Hetzer, in charge of the studies, attributes the difference to the fact that the fatter dams tend to be lighter both at breeding time and when they farrow. Dams of the fourth generation pigs were 24 pounds lighter at breeding time and 90 pounds lighter than the leaner dams at farrowing time. Thus, the leaner sows provide more nutrients to their offspring during gestation than the fat ones.

SWINE

In the Yorkshire lines, responses of weaning weight and postweaning growth rate have been just the opposite thus far. The Yorkshires tended to be larger and leaner than the Durocs to start with, thus a given change in fatness would have no immediate effect on weaning and post weaning growth rate of the Yorkshire pigs, while the same change would immediately become apparent in the Durocs.

No difference in litter size at birth or at weaning has been noted between the two lines. This indicates that selecting for leanness has no adverse effect on sows' fertility or mothering abilities.

One of the most significant features of these studies, and of particular interest to consumers, is the fact that there are major differences in several important carcass characteristics between the fat and lean lines.

Yield less fat . . .

The fourth generation lean Durocs averaged 4.8 per cent less fat than the fat ones, besides yielding 4.1 per cent more lean cuts and 1.1 square inches more loin eye muscle area. With 200-pound pigs, those selected for leanness would yield 8.2 pounds more lean meat and 9.6 pounds less fat than the fat ones.

Although the differences in Yorkshires were smaller, they were significant.

The relation of fatness or leanness to flavor is being studied at Beltsville. Tests show that the Durocs with more intramuscular fat (not back-fat) produce the tastiest and most flavorful meat.

Future studies will be designed to lowering back-fat thickness and at the same time retaining or increasing intramuscular fat content to the most desirable level.

This Tag Means Your Dairy Spray Has Repellent Protection

*This tag identifies sprays containing one of the Cow-Tent Repellents . . . MGK Repellent 11, or MGK Repellent 326

Look for the COW-TENT* that makes Contented Cows (and bigger milk checks!)

Nothing will throw a cow into a slump faster than a swarm of biting, buzzing, blood-sucking flies or mosquitoes. That's why you should look for a dairy spray displaying the Cow-Tent tag shown above.

Cow-Tent is the trademark used to identify dairy sprays that give your cows *double-barreled* protection.

First, Cow-Tent sprays have *repellency*. They contain either MGK Repellent 11 or MGK Repellent 326. These are the remarkable new chemicals that drive flies away from your cows. They give your herd an *extra* measure of protection never available in older type sprays.

Second, Cow-Tent sprays contain *Pyrethrin*. This is the potent insecticide that knocks down flies . . . kills them quickly.

How Cow-Tent Works

When a swarm of flies attacks a cow protected by Cow-Tent, many of the flies are repelled by its action and don't light. Then, most of the flies that do light get a "hot foot" and leave immediately. Finally, those flies that aren't stopped by the repellent action are killed quickly by the Pyrethrin.

The result is that cows protected by Cow-Tent sprays have fewer flies . . . and get bitten far less often.

Sprays containing Cow-Tent are effective against stable flies, house flies, horse flies, deer flies, horn flies, mosquitoes, and gnats. They give field as well as barn protection. *And they are fully registered with the USDA for dairy spray use.*

So this year, keep your cows happy . . . and watch your milk check go up . . . by using dairy sprays that contain Cow-Tent.

(Not all sprays contain Cow-Tent. That's why you should always look for the big Cow-Tent tag or the Cow-Tent symbol on the label . . . your assurance of effective repellency.)

FREE FLY CONTROL PAMPHLET

Sprays with Cow-Tent give you the best protection you can buy. Send for this free pamphlet which shows what you should do to set up an effective fly control program on your farm that complies with all milk sanitation requirements.

Now . . . **Protection Against Face-Flies**

Dairymen whose herds were hit by face-flies last year know what a menace this new fly presents. Face-flies cluster on a cow's head, getting in her eyes and nostrils. The severe discomfort causes heavy milk production drop. If face-flies hit your herd, ask your dealer for the new, effective face-fly preparation containing Cow-Tent. Write MGK for the names of the dealers in your area who handle face-fly repellents containing Cow-Tent.

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75 years ago...

When the well-fed cow that has never been much of a cow anyway puts the avails from her food on her own carcass instead of in the milk pail or the butter tub, it ought to be taken as good proof she is a beefer and not a natural-born dairy cow.

Still we have seen good milkers run to beef, early in the fall but it was because they had been half dried off by being confined on a very short and dry pasture in the summer.

Many of their milk ducts had been enfeebled or closed so that when the cows had plenty of food again, they could not make it available for milk giving. They could do nothing else with it but clothe their bones with meat.

W. A. Hoard

Maine and Wisconsin lead

Eastern state bred 56.3 per cent of all cows artificially in 1959, while Wisconsin had top total of 2,251,901 bred.

ONE-THIRD of all cows and heifers in the nation 2 years of age or older kept for milk were bred artificially during 1959. Over one-quarter million or 1.7 per cent more cows were bred artificially last year than in 1958.

The grand total of cows bred artificially was 6,932,294, or 32.5 per cent of the total dairy cow population. It is estimated these cattle were located in 930,059 herds throughout the country.

Following is a listing of the states ranked in order of the number of cows inseminated:

Wisconsin	1,251,901
New York	600,289
Minnesota	589,251
Pennsylvania	531,201
Ohio	375,283
Iowa	351,170
California	340,231
Michigan	313,405
Illinois	260,774
Indiana	162,719
Missouri	153,756
Washington	151,209
Vermont	119,954
Kentucky	115,238
Idaho	113,629
Tennessee	104,578
Virginia	93,833
Kansas	89,075
Florida	86,578
Oregon	85,236
North Carolina	80,234
Maryland	78,402
New Jersey	76,972
Nebraska	68,634
Texas	61,484
Utah	59,202
Maine	58,020
Connecticut	57,218
Louisiana	52,812
Massachusetts	51,681
Georgia	38,958
Alabama	38,003
Mississippi	36,610
Colorado	27,774
West Virginia	27,401
New Hampshire	26,946
Arkansas	26,432
South Carolina	25,573
South Dakota	25,222
North Dakota	23,979
Arizona	14,811
New Mexico	14,493
Montana	13,043
Oklahoma	12,828
Delaware	11,092
Rhode Island	6,408
Wyoming	4,672
Nevada	3,427

Following is a listing of states ranked in order of percentage of dairy cows bred artificially:

Maine	56.3
Connecticut	56.1
Wisconsin	52.1
New Jersey	52.0
Washington	51.8
Massachusetts	51.7
Utah	51.0
Pennsylvania	50.6
Idaho	47.0
New Hampshire	46.5
Ohio	44.3
New York	43.0
Vermont	42.1
Minnesota	41.0
Rhode Island	40.1
Michigan	38.6
Oregon	38.6
Florida	35.6
Illinois	35.4
Iowa	35.4
California	34.6
Delaware	33.6
Maryland	31.6
Indiana	31.0
Arizona	26.9
New Mexico	26.4
Virginia	22.5
Kansas	21.1
North Carolina	21.0
Colorado	19.3
Missouri	19.1
Kentucky	18.7
Nevada	18.0
Nebraska	17.8
Tennessee	16.8
Louisiana	16.5
South Carolina	15.9
West Virginia	15.2
Montana	14.2
Georgia	12.7
Wyoming	11.7
Alabama	10.3
Texas	8.6
South Dakota	8.3
Arkansas	8.1
Mississippi	7.3
North Dakota	7.0
Oklahoma	3.5

Enrollment is below average in most southern states and in some of the Corn Belt states where dairying is not too extensive. Most of the southern states are below 20 per cent enrollment but are increasing each year.

It is interesting to note that some of the heaviest users of artificial service are the larger herds. For example, in Florida, where the average DHIA herd is 200 cows, about 35 per cent are artificially inseminated. In California, where herds average 125 cows, 34.6 per cent are on A.I. In Arizona, with herds averaging 106 cows, the average is 27 per cent.

There were 64 bull studs operating in 1959 compared to 71 in 1958. With only a few months of 1960 passed, the number is now reduced to 61. Mergers and consolidations account for the reduction in number of bull studs.

In 1958 there were 2,483 cows inseminated per sire maintained by A. I. organizations. The average for 1959 was 2,816 cows per sire, an increase of 333 cows per sire annually. Back in the old days, this increase in cows would have required 10 additional sires.

To equal the volume of one sire in A.I. today, it would take at least 100 sires in natural service if they serviced 28 cows a year. Some sires, of course, are used heavily. We could cite at least a dozen sires that averaged over 20,000 first services in 1959. In 1939, we averaged only 228 cows per sire!

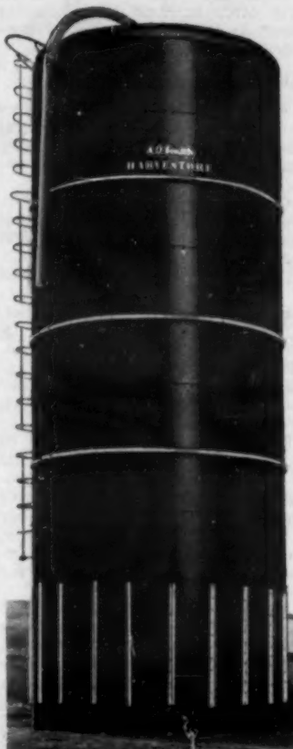
Beginning January 1 this year, 41 per cent of the 2,544 sires in A.I. were proved in DHIA.

We need not apologize for our proved sires in A.I. On a 305-day lactation, 2x, mature basis, their daughters average 11,493 pounds of milk, 482 pounds butterfat compared to the dams' average of 10,918 pounds milk, 451 pounds fat.

ARTIFICIAL BREEDING

"The very first year WE FED HARVESTORE Haylage we increased our annual gross income per cow.....$154.93"

Claredon Farm, R2, La Grange, Kentucky



BEFORE HARVESTORE...

We felt that our feeding program was not giving us the milk that our 47 Holsteins were really capable of producing... so we decided to visit other dairymen who said they had improved their milk production by feeding HARVESTORE Haylage. We saw that they not only *increased* production... but *reduced* their costs as well! As a result of our investigation, we decided to erect our first HARVESTORE in 1958.

AFTER HARVESTORE...

We cut our alfalfa in the "bud" stage and stored it in our HARVESTORE at 40 to 50% moisture. *It analyzed 20.2% protein*... so we were able to eliminate the 32% commercial dairy mix we had been adding to our grain ration. Here are our rations:

Before HARVESTORE	*After* HARVESTORE
Corn Silage	HAYLAGE
Alfalfa Hay	800 lbs. ground ear corn
800 lbs. ground ear corn	200 lbs. ground oats
200 lbs. 32% commercial dairy mix	NO DAIRY MIX OR HAY

IN THE VERY FIRST YEAR...

Our results were far above our highest expectations. ON THE SAME 47 COWS, we *increased* our production AND *reduced* our costs... giving us a combined increase in our gross income per cow of..... $154.93

OUR HARVESTORE MECHANIZED FEEDING SYSTEM CUTS OUR LABOR COSTS...INCREASES OUR PROFIT!

HARVESTORE'S Sweep-Arm Bottom Unloader delivers Haylage direct to our Mechanized Feed Lot Bunk Feeder. We never touch it. No more bales to handle! No more silage to feed.

Because of HARVESTORE'S Bottom Unloading principle... which makes possible "First-in—First-out" storage... we were able to harvest and store five crops of alfalfa *without interrupting our feeding program.*

We are convinced that Haylage... made possible by the HARVESTORE "Sealed" Storage Principle... is the answer to better feeding, lower costs and higher profits.

LET HARVESTORE HAYLAGE BRING YOUR FEED COSTS DOWN...BRING YOUR DAIRY PROFITS UP!

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Name.....
Address.....
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Tests prove it... Use
TABATREX® Fly Sprays
on your cattle
and

MAKE $50.80 EXTRA
ON EVERY COW
YOU MILK!

Cattle sprays containing new TABATREX protect cattle from the pain and annoyance of vicious blood-sucking flies, not only in the barn, but out in the pasture and feed lot as well.

Remember, it's *outside* the barn that cows graze and manufacture their milk. It's *outside* the barn that blood-sucking flies attack cattle and reduce their milk production.

It's outside the barn that fly protection really counts!

Sprays with TABATREX really protect

Here's proof. The Illinois Natural History Survey has just completed an extensive three-year series of tests on midwestern dairy farms, and here's what they found.

Dairy cattle protected from blood-sucking flies in the pasture and feed lot produced 10 to 20% more butterfat than unprotected cows! Not only that, but here's another surprising fact...

When dairy cattle are protected from blood-sucking flies, *they keep on producing more butterfat right on into the winter months... even after the fly season is over!*

As a result of this significant field work, the Illinois research team had this to say: "... *there seems to be no room for doubt that good control of biting flies can and will pay handsome dividends.*"

In these important tests, dairy cattle protected by sprays containing TABATREX were the most effective of the commercial formulas used. Cows protected with TABATREX sprays produced an average of 15% more butterfat during the summer months than unprotected cows... and made their owners an average of $50.80 more per summer.

TABATREX is fully approved for all livestock... including dairy cattle.

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POULTRY

by Joe W. Sicer

Holding over old hens?

Prospects are for higher egg prices. Should you hold your hens for a second year of production?

SOME folks who were thoroughly discouraged with the chicken business this spring and did not order baby chicks are wondering now if they should hold onto their hens since egg price prospects are brighter.

Others, who started chicks as usual, are being tempted, by stories of high prices offered for pullets, to sell some of their pullets and maintain their usual number of layers by holding onto old hens.

What are possibilities of profit with birds in their second laying year? Is keeping them good business? If not, why not?

Low market on fowl . . .

First, let's look at this problem from the standpoint of its general advisability, without considering any conditions that may be peculiar to this year.

One point in favor of holding over the hens is the high cost of raising replacement pullets and the low price received for fowl. It will cost in the neighborhood of $1.50 to $1.75 (maybe more) to raise or buy a replacement pullet. At the end of the laying year, a hen may bring 50 cents or less. (This year the farm price of Leghorn fowl is around 11 cents per pound but a year ago it was down to 7 cents or 8 cents.)

This depreciation cost of $1 to $1.25 can amount to 5 to 8 cents or more, per dozen for eggs produced during the first laying year, depending upon the number of eggs laid and the mortality. This cost per dozen is greatly reduced if the birds can be held for a second laying year.

Another argument in favor of second-year production is that eggs from such flocks are nearly all large eggs and bring a higher price than the small and medium eggs laid by pullets at the start.

Better lay favors pullets . . .

The above advantages often are offset by the fact that egg production is usually not as good the second year. Many hens will be out-of-lay for 6 to 12 weeks while molting. Often production is down by as much as four or five dozen eggs per bird for the year.

In addition, egg quality usually is poorer during the second year, both shell quality and interior quality. Quality often is good when the hens first renew laying after their molt, but tends to go down faster than with a pullet flock.

Mortality is uncertain and often higher than during the first year.

Second-year hens are somewhat heavier than they were as pullets, hence, more feed is required for body maintenance. This, coupled with molting and lower egg production, means feed required per dozen eggs will be greater the second year than the first.

For those who have housing facilities for only one flock, holding the hens over the second year will mean having a smaller flock than would have been the case had a full quota of new replacement pullets been raised. During the first year some birds died and some were culled. The depleted number would bring in less total money, even though returns-per-bird may equal the returns-per-bird from a flock of pullets.

What about this year?

This year, chances for making a profit from second-year layers are above average. Egg prices 5 to 8 cents above the previous year are predicted for July 1 through the rest of 1960.

The farmer who didn't buy pullets may be wise to hold onto his hens if he manages them right.

The poultryman who can figure out satisfactory housing for the old hens without handicapping the pullets may, with the resulting larger flock, cash in on what looks like a good opportunity. An early-hatched pullet flock, however, probably will still make more money than a flock of hens held over.

If he can get them at a reasonable price and in late summer or early fall, the farmer with no chickens may find this a good year to buy hens from a commercial poultryman.

Handling the holdovers . . .

Here is a suggested program for those who plan to carry their layers through a second year:

1. Keep the flock laying as long as possible the first year.

2. Beginning in August, use artificial lights to give a 14-hour, or longer, day.

3. As production shows signs of slipping, maintain feed consumption by tempting the birds with concentrate pellets or mash moistened with skim milk. Try to hold production up to 60 per cent until late fall.

4. Cull the flock as production drops. Birds that quit laying early and start to molt will rarely be worth carrying over. Extent of the culling will depend on the flock. The better the flock has laid, the less culling will be needed. Few flocks will justify carrying over more than two-thirds of the original number.

5. When production drops below 50 per cent, or about the middle of November, force the birds into a molt. Timing of this force molt may be earlier or later than November, depending upon geographical location and length of time the birds have been laying.

Accompany the molt by stopping the artificial lighting, and withholding feed and water for a day. It probably will be necessary to drastically restrict feed for several days. Do not, however, withhold water more than one day, and in hot weather not more than one-half day. In persistent flocks, it may be necessary to take the water away for another day three or four days after its first removal.

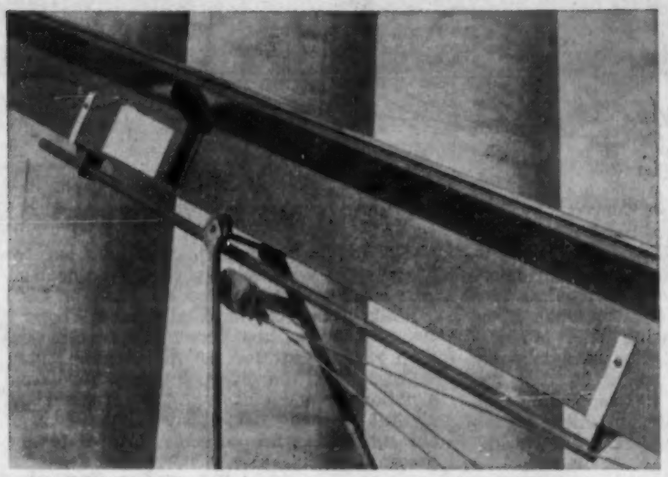
There should be feathers all over the place by the end of the week, and production should be down.

6. Restore full feed of a good laying ration as soon as the molt is definitely started.

7. After six weeks, turn on the lights again. The birds should jump back into good production within two weeks.

Is your farm elevator safe?

(Continued from page 746)



SAFETY TRACK restrains upper member of undercarriage to trough to prevent collapsing. The cost of this unit was approximately $5.

carbon particles may be exhausted and deposited in a bale.

In any case, imagine the problem you would have if ignited debris were elevated into your barn—unnoticed. Protect engine from falling leaves and straw. Direct the exhaust away from elevator trough.

Avoid electric power lines . . .

Contact with overhead electric power lines while maneuvering an elevator could prove fatal. Maneuver your elevator in a lowered position. Then don't hoist it into power lines.

Use a tractor, where possible, to position your elevator. If you do contact a power line, don't step off the tractor during the contact. If the machine cannot be freed by pulling ahead or backing up, **jump, do not climb, off the tractor.** Then avoid touching tractor or elevator until electric power is shut off.

By all means, when power is on, never grasp the hoisting crank to lower an elevator caught in overhead electric lines; nor should you climb up trough to free lines.

How to prevent accidents . . .

- Add a safety track to your elevator if it is the type that may collapse.
- Fix the hoisting crank so that it will stop automatically, if you lose grasp of the handle.
- Repair or replace worn and frayed hoist cable.
- Shield all moving parts in the vicinity of the loading hopper, especially a power-take-off shaft.
- Shield engines from falling debris.
- Direct engine exhaust away from elevator.
- Lower elevator when moving it.
- Lower elevator when it is not in use.
- Keep elevator chassis level to avoid lateral tipping.

Don'ts with elevators . . .

- Don't upend an elevator without a safety track.
- Don't add extensions to the trough on your elevator without consulting the operator's manual concerning manufacturer's recommendations.
- Don't hoist your elevator higher than recommended by the manufacturer.
- Don't block up the wheels or axle to achieve greater discharge height.
- Don't use an elevator as a ladder or scaffold.
- Don't allow anyone to catch a "free" ride into the barn on a moving bale.
- Don't let children climb on an elevator.
- Don't maneuver raised elevators near overhead electric power lines.

Avoid personal injury and lost working time by eliminating hazards associated with your elevator. **Practice careful operation.** Always keep you and your portable elevator safe. **THE END**

75 years ago...

Mr. Ainsworth, of Norwich, N. Y., in sending the pay for three subscribers — for which, many thanks — asks if the feeding of silage has any bad effect on the milk for cheese making?

It is the first time we have ever heard of the question being raised, though we are aware that milk condensers, at first, without having positive knowledge on the subject, gave way to their fears and forbid their patrons using silage. How they have finally settled the matter we are not aware. But for domestic use for butter and cheese making, the good character of the milk that properly fed silage will make has ceased to be criticized, as we understand it.

We know of several factories where operators make no such objections as the one at Norwich does, as stated by Mr. Ainsworth. The writer of this takes all he can get of such milk in the factory he has an interest in, and would be glad to get more. The cheese product is all right, so the market says.

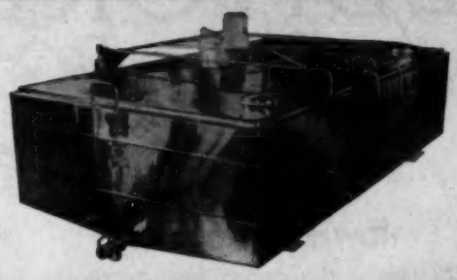
W. B. Howard

If Your Wife's Vote Counts (AND IT USUALLY DOES)

Have Her Look At A

GIRTON DELUXE FARM TANK

FOR LITERATURE AND THE LOCATION OF INSTALLATIONS WRITE TO:



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Don't take our word for it—try a new RIDGID Flaring Tool! See if you don't get smoother, stronger, more uniform flares . . . in less time and with less effort than ever before!

Then, compare this new RIDGID Flaring Tool, feature-by-feature, with any flaring tool you've ever seen or owned:

• Feed releases automatically when flare is fully formed. • Reversing feed screw burnishes flare. • Hardened steel die bars are precision-machined. • Large, comfort-grip feed screw handle turns easily. • Precision-ground, hardened steel flaring cone, eccentrically mounted in precision bearings, produces rolling action for even metal flow... gives uniform flare walls without galling. • Tubing hole sizes are clearly marked. • Easy sliding rugged malleable yoke serves as stop for tubing to give correct flare size. • Yoke clamp screw fits into centering hole... locks bars, yoke and tubing into perfect alignment. • Stop pins keep yoke on die bars at all times . . . yoke can't slide off.

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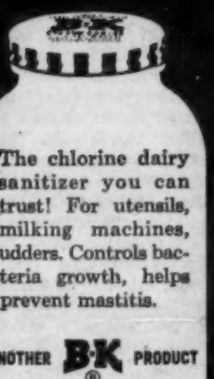
...helps to protect your milk quality!



The chlorine dairy sanitizer you can trust! For utensils, milking machines, udders. Controls bacteria growth, helps prevent mastitis.

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EDITORIAL COMMENT

HOW MUCH GRAIN?

FEW men in this century have contributed as much to the increased knowledge of dairy cattle feeding as has Dr. C. F. Huffman, who is quoted in our feature article beginning on page 741. His counsel is heeded by research workers and dairymen throughout the world.

Certainly his provocative observations will stimulate thought and debate wherever dairymen meet. We would caution our readers to study Dr. Huffman's statements carefully. For purposes of emphasis, we repeat the following:

"Feeding for top production is still **an art to be learned by experience.** It is best learned under the guidance of an expert cowman, a master.

"The rule of an expert feeder is to increase grain as long as the cow responds with extra milk or until her appetite lags. The expert senses when to ease off on grain and let the cow catch up. He makes sure she is eager to eat at each feeding."

In other words, Dr. Huffman is not recommending scoop shovel feeding of grain. But he very correctly suggests that dairymen raise their sights with their best dairy cows. We should be challenged in this way.

But we question what proportion of dairymen throughout the country can use Dr. Huffman's advice profitably. Far too many farmers throw grain to their cows regardless of the animal's condition, appetite, or production. It is one of our greatest economic wastes in the industry. For such people to boost their grain feeding irrespective of these considerations is merely to add to the waste which already exists.

In our opinion, Huffman's advice is sound but it must be applied with intelligence by the able dairy husbandman. When so done, the results may be truly rewarding.

IMPORTS AND LABOR COSTS

THE U.S. Tariff Commission has recommended, and the President has approved, more liberal import quotas for certain foreign types of cheese.

While the amounts are small, representing less than 1 per cent of our total national cheese supply, they can have a marked effect on American areas producing Edam, Gouda, and Italian type cheeses.

It would appear, moreover, that increased imports are simply going to mean an added burden on our government. They will displace U.S. made cheese, making more available for purchase under the price support program. Perhaps the cost should be charged to the Department of State rather than to U.S.D.A.

But the point we make here is the necessity for import quotas. Recently New Zealand increased the wages for dairy farm workers. Surprisingly, however, they are paid only $28.50 per week.

It is difficult to compare wage scales from one country to another because of the difference in benefits, but it is certainly conservative to assume that the wage rate paid on U.S. dairy farms is close to double that paid in New Zealand. Obviously, then, dairy products can be produced for considerably less in New Zealand than they can in the United States because of our higher costs. This has no reference to efficiency whatsoever. It is simply an economic condition with which dairy farmers must live in this country.

It is easy to see what would happen if we had no import quotas. Dairy products produced in other dairy countries with much lower wage scales could very easily flow over our borders and undersell U.S. products. Since the government is purchasing dairy products to stabilize the domestic price level to dairy farmers, the end result would be that the U.S. government would be supporting the price of manufactured dairy products for almost all of the dairy countries of the world.

USE VETERINARY LABORATORY

MANY states have veterinary diagnostic laboratories. Their facilities and highly trained specialists are available to make diagnoses which may not be possible in the field. We have long suspected, however, that these laboratories are not being used as much as they should. Recently this suspicion was confirmed by a positive statement by one of the nation's leading veterinary scientists.

Our failure to make full use of these facilities may be the result of a lack of information. We cannot recall attending a dairy farmer meeting where the work of a diagnostic laboratory was discussed. Neither have we heard nor read of a group of dairy farmers being invited to tour such a laboratory.

Those of our readers planning dairy meetings this fall and winter might consider a highly informative program on the work of the veterinary diagnostic laboratory in your state. It may well be one of the most interesting, intriguing, and profitable programs ever presented.

BETTER LATE THAN NEVER

DURING this election year farm program proposals will be in the limelight. Unfortunately, it is difficult to evaluate the proposals advanced because careful economic analyses have not been made of the projected results of operating with such programs.

Recently the U.S.D.A. Advisory Committee on Economics Research recommended for high priority the expansion and expediting of research providing a more comprehensive analysis of both the local and aggregate effects of alternate types of programs in bringing about needed adjustments in agriculture. Comprehensive study of the Soil Bank program, since its initiation in 1956, and of alternative types of programs is especially needed.

Thus far, our economists have done very little in this area. The Iowa group did some pioneering work in this field (Hoard's Dairyman, January 10 issue), and shortly thereafter a U.S.D.A. study was released.

But the problems of stabilizing and improving farm income should have been obvious long ago; 11 and 12 years ago farm prices started to plummet following the postwar boom. Dairy prices hit their lowest level since World War II in 1949 and 1950. It seems exceedingly strange that we should just now be getting around to seriously treating this highly important subject.

But better late than never. We hope the recommendations of the advisory committee will be heeded and that competent economists will devote considerably more attention to making impartial and sound analyses of the economic impacts of the various farm programs which are advanced.

"WHY WE QUIT TESTING"

ONE of the most perplexing questions we raise in connection with the dairy business is: Why are there so few cows on test?

While it is true the total number shows a steady increase, the percentage is still less than 13 per cent for the nation as a whole.

Considering the disappointing picture from a national standpoint, we were surprised and pleased to find that nearly 55 per cent of our subscribers are on some form of testing program.

Our most recent survey revealed that among our subscribers 25 per cent are on DHIA, 15 per cent on owner-sampler, 5 per cent on weigh-a-day-a-month, 3 per cent on HIR, 4 per cent on private testing, and 2 per cent are enrolled in junior DHIA.

It is not this group that gives us concern. We are deeply concerned, however, with the 18 per cent who have never tested and, even more so, with the 10 per cent who, for one of various reasons, quit testing.

Some of the reasons given were logical. Testers are not always available. Some associations have disbanded. A few subscribers told of having disease outbreaks of such proportions that they dropped testing for a short period. Others intend to join a testing association in the near future.

Here are just a few of the other reasons given for quitting: Too expensive. No money. Too busy. Poor cows. No new information was gained to justify expense. Cows do well enough not to sell for beef. Inconvenient. Tester was too smart. Herd isn't large enough to justify expense. I know my cows. No cows to sell. Banker doesn't believe in spending money. No room to keep tester. Short of help. Not accurate. Four testers in one year.

It would appear that we must do a far better selling job on the value of production testing.

It's fairly obvious, too, that in some areas officers and directors of testing associations are unwilling to pay the wage level required today to interest the caliber of DHIA men needed to do a satisfactory job.

We have long contended that the cows which actually lose money for their owners are the ones which cause our surplus. We seriously doubt that a dairy farmer who has production information on his herd would continue to keep the unprofitable ones long.

Maybe it will be necessary for dairymen themselves to get out and sell their neighbors on the value of testing. They probably stand to gain as much in the long run as the individual himself who does not now test.

75 years ago...

"Diversified farming" is all right when applied to a state or a whole country but when applied to one small farmer it often makes him a small man all around — keeps him learning too many trades, and a novice in all of them — keeps him paying for half used tools to rot and rust.

W. D. Hoard

Questions from Our Readers

Red barn paint best

Which would be the most durable barn paint, red or gray?

Minnesota A.S.

A good quality red barn paint having an iron oxide pigment will be considerably more durable than a gray paint. Generally, the former has superior durability to any other type of paint commonly used on barns.

—D. W. Bates
University of Minnesota

Tachometer—true time?

My tractor is equipped with a tachometer which also shows hours of engine operation. Is this a true time?

Illinois C.R.A.

This does not necessarily show the true time. The tachometer shows hours of use at rated engine speed. If the engine is operated at less than rated speed, the tachometer "hours" are less than actual clock hours. If the engine is operated above rated speed, the tachometer hours shown will be more than actual clock hours. However, for most farm uses, the tachometer hours reading is a satisfactory approximation of actual clock hours.

If you have special requirements, which require readings of actual clock hours, your dealer can supply an hour-meter, which is basically a small electric clock. This device operates whenever the engine is running, regardless of engine speed. —Melvin E. Long

Mix concrete in mixer

We are thinking about mixing in place a floor for a trench silo 16 x 80 feet. We are going to lay down 8 inches of gravel, mix in the recommended amount of cement, and add water as required. We will do all the mixing with a tractor and field cultivator.

Will this work? If not, why not?

New York M.S.K.

This method sounds good from a labor standpoint but is not likely to yield quality concrete.

If concrete is to be durable, it must be made from well-graded materials, thoroughly mixed so that each particle is coated with water cement paste. It is essential that the correct amount of water be used. Generally two-thirds as much water as cement, by volume, is about right.

Your method would provide for no control of the mixing water and neither would it assure that each particle would be coated with the water cement mixture. It is also likely that the light materials would work to the top, with the coarser particles settling to the bottom.

All these factors would make for a very poor-quality concrete, not worth the time and materials that went into it.

—D. W. Bates

"Free play"—extra insurance

Why is it necessary to adjust the foot clutch linkage to provide for "free play" in the engaged position?

Iowa H.S.

This free play is an extra insurance that the clutch will engage completely. Otherwise, it might be possible for the clutch to be slipping slightly even though the operator does not have his foot on the pedal. —Melvin E. Long

Correct gear

Should I always operate my diesel tractor at rated speed, or can I throttle back and use a higher gear for light drawbar loads?

Ohio E.M.E.

In general, it is advisable to operate diesel engines at rated speed and obtain desired ground speed by selection of proper transmission gear ratio. Most gasoline engines can be operated over a speed range to help obtain desired ground speed. However, the recommended practices may be different for your particular tractor, so it's best to check your owner's manual or ask your dealer. —Melvin E. Long

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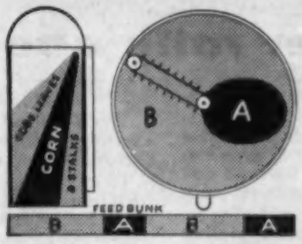

Creates off center hard core; corn and high nutrition particles are in this core, leaves, stalks, and cobs roll to outside. This separates the silage into feed areas of varying quality. Area "A" is high quality. Area "B" is low quality. When silo is unloaded the silage goes into the feed bunk in the same manner it is filled, sections of "A" high quality feed interspaced by areas of "B" low quality. Only one-fourth of your cows get good top quality feed.

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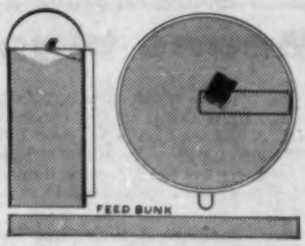

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SNF challenges dairymen

Solids-not-fat is one of the hottest subjects in the dairy industry today. Here are a few of the reasons.

by C. J. Wilcox

WILL your milk be tested for solids - not - fat (SNF) in the future? It is possible. In Europe and some U.S. markets it is being done now. And there is good reason for the growing interest in testing for SNF as well as butterfat. After all, there is twice as much SNF in milk as there is fat. It's very high in nutritional value. Why not recognize and pay for it?

Let's look below the creamline and see what's there. This part of the milk contains an ample number of minerals, a high-quality source of energy (lactose), and, perhaps most important, nature's highest quality proteins.

Milk protein contains all of the essential amino acids. About 75 per cent of the nation's dietary calcium and 50 per cent of its riboflavin (vitamin B_2) come from milk and milk products.

Markets now paying on the SNF basis are those where most of the milk purchased goes into manufactured milk products. But fat is losing its value in the fluid milk market. If new payment practices invade the fluid milk market, as many experts predict, the pocketbook of every dairy farmer will be affected.

What can you do if these predictions come true? What factors affect the SNF content of milk?

Causes of variation in SNF content can be grouped in two categories, genetic and environmental.

The first clue that SNF content is inherited probably lies in the differences in the milk of different breeds. Two 1959 reports showed the following lactation averages: Jerseys 9.49 per cent, Guernseys 9.15 per cent, and Holsteins 8.54 per cent. Ayrshire and Brown Swiss data were too limited to be truly representative.

Lactation averages are being calculated by research workers throughout the nation at the present time.

Repeatability gives the logical upper limit of the degree to which any characteristic is inherited. Repeatability here means the tendency for an animal to produce at the same level (or at least in some systematic fashion) in consecutive lactations.

As evidenced by three (1955-59) reports, repeatability of SNF content is rather high. Perfect repeatability would be represented by the value 1.0, and complete lack of repeatability by the value 0. Estimates obtained by research workers ranged from 0.6 to 0.8.

Specific heritability estimates have also been published. A scale of from 1.0 to 0 is used again. Estimates ranged from 0.34 to 0.70. This means that 34 to 70 per cent of the variability among animals is due to their genetic make-up. These estimates are rather high. Milk yield is inherited to about the degree of 0.25 to 0.33. Fat per cent is inherited to about the same degree as SNF.

Breeders have improved their herds by selecting for milk yield and fat per cent. Can the same be done with SNF? With certain qualifications the answer is yes.

SNF content is not as variable as fat per cent. It will be harder to find superior sires. It will not be possible to cull with the effectiveness that has been attained with fat per cent. Incorporation of SNF in our existing testing programs and its inclusion in sire proofs would be logical at some future date.

A New Jersey study of daughters of Holstein sires (with at least five daughters each) showed a range in average lactation performance of from 8.08 to 8.83 per cent. The legal SNF minimum in many states is 8.50 per cent. Genetic progress is slow and involves long-range planning but, once attained, is nearly permanent.

Environmental factors are important in day-to-day and month-to-month herd management. Providing animals with a suitable and favorable environment lets them perform as well as their inherent ability will allow.

Thinking in terms of lactation averages, cows produce milk of decreasing SNF content as they age. Most research shows an average decrease in SNF of 0.05 to 0.10 per cent per lactation. A drop of over 0.10 per cent may occur between the first and second lactation with smaller drops in subsequent lactations. The average age of the herd, then, has some effect on the SNF content of the milk sent to the plant.

SNF changes from month to month during the year. These changes are due to changes in feed, management, and climate. The degree depends on the type and severity of all factors combined.

Examples from three states show a range from high to low months of: New Jersey 0.35 per cent, Arizona 0.50 per cent, California 0.22 per cent. Depending on local conditions, larger or smaller ranges can occur.

Hot summer months generally are lowest, and cold winter months

The author is an assistant professor of dairy husbandry, University of Florida.

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highest. Providing shade, ample water, and feed of adequate quantity and quality should keep summer drops to a minimum.

SNF content varies considerably during lactation. Shortly after calving, SNF content is generally high, dropping to a lactation low by about 60 days post-partum. Very slight increases occur through the sixth month. By the seventh month SNF content starts to increase rapidly, and continues to do so until the end of the lactation. This increase occurs in animals in the fourth or fifth month of pregnancy.

Animals which remain open increase little or none during the latter stages of lactation.

A range of about 0.4 or 0.5 per cent can be expected from the highest to lowest points during the lactation.

Mastitis causes drop . . .

In acute cases of mastitis, SNF values as low as 4.3 per cent have been reported. Even subclinical cases cause drops. You might not even notice these cows. If SNF provides a basis for payment, mastitis losses will be even more expensive that at present.

Several investigators studied the effect of various feeding programs on SNF content. They don't agree. Some suspect that low-energy feeds will cause drops in SNF. Underfeeding doesn't pay, anyway.

What can you do to avoid drops in SNF content? With age, stage of lactation, and pregnancy—probably nothing. On the other hand, you can avoid drops due to summer slumps, mastitis, and inadequate, low-energy feeding. Poor management is almost immediately reflected by drops in milk yield. Poor management also causes lowered SNF content.

Summary . . .

We don't know when (or even if) SNF will form a basis of payment. But knowledge of the factors affecting SNF is vital if you plan to do an effective job of controlling it.

SNF content is highly repeatable and heritable. Selection would promise some degree of success. Age, stage of lactation, and pregnancy affect SNF content, but are rather inevitable consequences of dairy cattle. Management practices proven for high-level and economic milk production will do much to avoid drops in SNF content due to month of year, improper feeding, and mastitis.

Smaller herds can compete

The 20- to 30-cow dairy herd can still provide a relatively favorable return under present economic conditions, contends a Michigan State farm management specialist.

Farm account records of 1957-58, economist Richard Wheeler reports, showed generally higher labor incomes for the specialized dairymen with 35 to 90 cows as compared to those with herds of fewer than 35 cows. But size alone was not the single factor, he emphasizes, as net incomes varied widely within each of the herd-size groups.

Some dairymen with small herds reported labor incomes over $8,000 while several large herds over 50 cows were actually operating at a loss. Records on 172 farms showed a two-year average labor income per operator of only slightly above $3,000. Wheeler stresses that this figure would be even lower if these dairymen had to replace their investments in land, buildings, and equipment at today's prices.

Dairymen in each herd-size group may have important opportunities in raising income through adjustments in crop production, feeding, herd selection, and management. Such changes, Wheeler believes, may offer more promise than large, new investments for expansion.

At present milk prices, he concludes, the operator of the well-managed dairy farm with 20 to 40 cows can continue to be a real tough competitor in producing milk at low cost.

Technorama planned in Michigan

THIS NEW BUILDING will be constructed on the Michigan State University campus, East Lansing. Its function will be to bring the story of new developments in agriculture to the public by exhibits, conferences, and meetings; guided tours; and through the mass communication channels of press, radio, television, and film.

Without charge, the public will be able to see the latest types of processes, buildings, equipment, materials, and machines for agricultural production, processing, transportation, and family living.

Built of brick, steel, concrete, and glass, the structure will contain more than 100,000 square feet of exhibit area, and will house cafeteria and banquet room facilities. The cost of the structure is estimated to be somewhere between $1½ and $2 million. It will be built without expense to the taxpayers, being financed instead by fees paid by exhibitors and cooperators from industry. According to Dr. Arthur W. Farrall, head of the M.S.U. department of agricultural engineering, "We have contracts or agreements for more than 80 per cent of the income necessary to make construction possible."

It is expected ground will be broken later this year.

The new building was first proposed following the successful 1955 Centennial of Farm Mechanization. Industrial executives expressed a desire for a year-round exhibit area. More than a third of a million people attended the week-long event in 1955.

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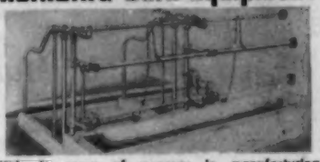

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DAIRY FARM HOME

We still CAN!

If all 20,000,000 women in the States who do home canning lined up toe to heel, the line would reach from Florida to Alaska.

by Marian Pike

AS OF today, crop prospects are good for another big home canning year. Many products, of course, go into your freezers, but there are others that lend themselves as well or better to canning. Both methods of food preservation are very popular.

Although handled by some hardware, department, and variety stores, practically all fruit jars, caps, and lids are sold through grocers.

JARS: Mason jars are sold throughout the United States.

Tapered jars introduced some years ago as a freezing container have been redesigned and are now called "can" "freez" jars. These jars, made in ½ pint, 1 pint, 1½ pint sizes, are available through grocers in most localities.

Wire clamp (lightning type) jars with regular size openings are still sold in New England and New York State. They are not generally available elsewhere.

CAPS: The two-piece metal cap (lid and screw band) is the most commonly used closure. Approximately 90 per cent of all home canning is now done with this type cap. There are several brands.

Zinc caps for regular Mason jars are available in most areas, but not in all stores.

A nationally-known canning supplies company says that to the best of its knowledge, these items are no longer manufactured:

Glass top seal closure (glass lid, rubber, metal screw band).

Wide mouth wire clamp (lightning type) jar and lids for them.

Wide mouth zinc caps.

When canning vegetables . . .

Each vegetable has a best canning age. If you haven't a garden of your own to watch, keep an eye on both the fresh vegetable markets and the produce bins in your favorite grocery stores. Yes, with a few exceptions, it is safe to can produce which has been rushed from field to market. But, beware of produce which has been marked down for quick sale as it is likely to be too far gone.

All vegetables must be fresh, clean, and canned as soon after gathering as possible.

Asparagus may be green or it may be blanched but the stalks should be firm, uniform and preferably of medium size with the tips and scales tight. Bend bottom of a sample stalk to find snapping point.

Beets should be symmetrical and not more than 1½ inches in diameter. Skin, smooth except at the top. Color, deep red throughout. Beets lose too much color unless roots and several inches of stems are left on until after pre-cooking.

Corn kernels should be plump, shiny, and filled with milk-like juice. Corn loses flavor and succumbs to flat sour more quickly than other vegetables, so unless it is right out of the patch, better avoid using except for relishes.

Green and wax beans. Pods, crisp and solid, the beans within, tiny.

Green peas and **lima beans.** Uniform in size. Green, inside and out. Small peas and beans far outrank medium and large ones in quality; some varieties are still tender and green after becoming overweight.

Tomatoes are firm with smooth, unbroken, evenly-colored skin. Color, depending upon variety, varies from deep rose to orange red. No green or unripe spots, fungus growth, or splits should mar its beauty.

Choose vegetables carefully and can by up-to-date methods.

Succotash relish

7 cups corn
4 cups green beans
1 cup celery
1½ cups onion
1 cup sweet red pepper
4 tablespoons salad oil
4 tablespoons flour
2 tablespoons powdered dry mustard
2 teaspoons turmeric
½ cup water
3½ to 4 cups vinegar
1½ cups sugar
1 tablespoon celery seed
4 or 5 drops Tabasco sauce
1½ tablespoon salt
1 clove garlic

Cover corn with boiling water. Boil 3 minutes. Drain. Cool; cut from cob (do not scrape); measure. Cut beans into small pieces. measure; cover with boiling water. Boil 5 minutes. Drain. Chop and measure onion, pepper, and celery. Pour salad oil into kettle; add flour, mustard, tumeric. Mix. Add water a little at a time and stir until smooth. Add 3 cups vinegar and cook until mixture coats spoon. Add vegetables and other ingredients except remaining vinegar. Cook over low heat for 20 minutes. If sauce becomes too thick (should be "runny"), add more vinegar. Pour hot relish into half pint or pint jars. Put lid on jar; screw band tight. Process pints 15, half pints 10 minutes in boiling-water bath.

NOTE: The word succotash, comes from the Indian **misickquath,** meaning ear or whole kernels of corn. Traditionally made with fresh corn and shelled beans, today both vegetables are likely to be canned or frozen, and the beans may be either lima or green.

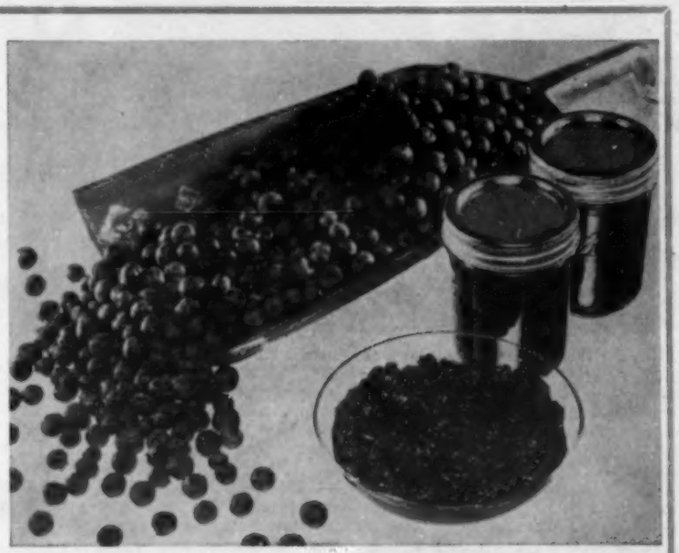
Blueberries

You are, of course, familiar with the luscious cultivated blueberries, but do you make good use of the 15 or 20 varieties of the uncultivated family?

Any berry of this group growing southwest of the Appalachian Mountains is likely to be called huckleberry. The true huckleberry is said to be somewhat more acid and contains larger seeds than found in the blueberry. Some huckleberries are black; others have a bluish cast. You may even recall their having been called whortleberries or bilberries.

To can blueberries . . .

Commonly canned for use in pies, blueberries may be packed in water, in thin sirup, or without liquid. When packed without liquid, no sugar is used. (The berries are placed, not more than 2 or 3 quarts at a time, in a square of cheesecloth, dunked into boiling water until spots show on the cloth, then dipped into cold water before packing. Jar should be shaken to closely pack without crushing.) All three methods require that quarts be processed 20 minutes, and pints and 1½ pints 15 minutes in a boiling-water bath.



Blueberry Jam

8 cups blueberries
6 cups sugar
2 tablespoons vinegar
½ teaspoon salt

Wash, drain, measure, and then mash about 1 cup of the berries to provide juice to start cooking. Put all berries into kettle and boil about 5 minutes. Add other ingredients and boil rapidly to, or almost to, the jellying point depending upon whether soft or firm jam is wanted. Skim and pour boiling hot jam into hot fruit jars. Seal at once with regular home canning cap.

NOTE: For a delicate, spicy flavor, add **½ teaspoon allspice.**

From Day to Day

by Lois J. Hurley

THE week before school was out, I attended a style show put on by the eighth and ninth grade advancement sewing classes. My daughter, an eighth grader, modeled a pair of Bermudas, a shortie nightgown, and a print dress, all of which she made and on which she received two E's and a G plus.

Granting that the teacher was very lenient with the lack of ability and know-how in little 13- and 14-year-olds, the garments were surprisingly well done. Kathy is not a "natural-born" seamstress but her finished products almost proved that anybody who can read and follow directions can, with some help, construct a garment.

From time immemorial and long before there were sewing classes in schools, mothers have taught their daughters two basic functions of making and maintaining a home: Making bread and sewing. Summer months afford good opportunities to establish these skills and maybe you'll want to help your small daughter, or a beginning 4-H group, start to use the sewing machine. One of our state clothing specialists offers these good hints:

Have the little beginner learn the names of the main parts of the machine, and have her practice starting and stopping it, keeping her right hand on the balance wheel to give even speed.

Help her learn how much pressure she needs to exert on the knee or foot control to get different sewing speeds. Be sure her seat height is comfortable.

Let her practice several kinds of stitching without threaded needle. Draw straight lines about an inch apart on firm cloth and let her start threadless stitching on a line where most of the material is to the left, away from the needle. Let her come full length of the line, turn a square corner and stitch across to the next line, turn again and follow back to the starting point.

Next, let her stitch on a folded edge, as in making a hem. Fold material under into a narrow fold; then make another fold about an inch from the first. Show her how to stitch on the hem edge, guiding the pressure foot to get neat edge stitching.

Our specialist suggests that the child make a head scarf as a beginning item. Pull a thread in a square or oblong piece of firm material; have her stitch; then fringe the ends.

Kathy's teacher started the girls out in seventh grade on an apron, gathered onto a band with one pocket. Whatever the youngsters start on, have patience and don't expect anything near perfection for a long time.

The rippers are the most popular gadgets around sewing classes, my daughter reports.

"I told Miss Rasmussen that regardless of what grade I got on my dress, I certainly deserved an E in ripping," Kathy reported.

Choice of pattern important . . .

When they get to the stage where they feel they can attempt to make a dress, help the girls in their selection of patterns. The most serious objection I saw at the style show, where 56 girls modeled garments, was in the poor choice of patterns.

Short, tubby girls came out arrayed in big, billowy skirts, supported by four or five petticoats that made them look like balloons about to take off. Tall, skinny girls came out in brief sheaths. Teachers try to suggest but they don't refuse a girl her heart's desire in choice of the type of garment she wants to make.

Mothers can be more firm. It's an important part of teaching a girl to sew for herself, I think, to also teach her the fundamentals of line and design, so she can "accent the positive" and make the best of the good points nature has given her.

Good gripes . . .

An Illinois reader wrote recently, agreeing with the complaint I had registered on the practice of burying the neck and giblets inside the body cavities of frozen turkeys, and going on record with a couple of other gripes, in which I join her.

"My daughter has four small children, age 6 and down," she says. "She also has a bushel basket of training pants with stretched elastic that the children can't wear.

"We have tried pinning them on, but then the small child cannot help himself. We tried ripping the old elastic off, turning down a band and running in new elastic, but it makes the panties too short as they don't allow enough material to make an extra band.

"Is there any reason why manufacturers cannot sew this band on the pantie so that mothers can replace the elastic, which never lasts the life of the garment or anywhere near it?

"And, why, oh why, do manufacturers of children's cotton dresses and blouses insist on using nylon trimmings? I can't tell you how many times these laces, edgings, and so forth, have gone up in a puff of smoke or dissolved on the iron, as I tried to iron the garments to which they were attached.

"I set my iron to cotton temperature and try not to touch the trim, or I set temperature to rayon and have a hard time getting the cotton ironed dry. Is cotton lace so expensive they can't use it on cotton and leave nylon trim for nylon garments?"

I agree with this griping grandmother 100 per cent and I know that hundreds of you join us. This elastic-pantie problem lasts clear through into teens. I, too, have bags of white cotton underpants that are good for nothing but dust cloths because the elastic is stretched till they won't stay on.

And, there's nothing to compare with the fury I feel trying to iron a fussy white cotton blouse trimmed with synthetic lace.

I offer that as a motion! Any seconds?

The other gripe is about poor quality flavorings that bake or freeze out of foods.

"I have given up to $1.10 for a four-ounce bottle of flavoring," an Arkansas reader says, "and I can't even taste it in uncooked icing. When I buy cake or ice cream, it has flavor. Where do bakers and ice cream makers get their flavorings?"

I haven't suffered so much in this field. I freeze very little prepared foods and make a lot of package cakes, to which I usually add a little extra flavoring, and come out all right. But do others agree and have you any help for Mrs. Arkansas?

1477 and 1487. Pretty collared frocks are identical. 1477 is in sizes 10, 12, 14, 16, 18, and 20. Bust 31 to 40. Size 12, 32 bust, 5⅝ yards of 35-inch; ⅝ yard contrast. 1487 is in sizes 4, 6, 8, 10, and 12 years. Size 6, 2¾ yards of 35-inch; ⅝ yard contrast. Two patterns. Price 35 cents each.

8147. This is the type of shirtwaister every woman loves — yoked front and back for easy wearing, and with short or below-the-elbow sleeves. Sizes 34, 36, 38, 40, 42, 44, 46, and 48. Size 36, 38 bust, short sleeves, 5⅛ yards of 35-inch. Price 35 cents.

8155. As new as tomorrow and so exciting is this young yoked dress to sew monotone or with contrast, with sleeve choice. Sizes 12, 14, 16, 18, and 20. Bust 32 to 40. Size 14, 34 bust, short sleeve monotone, 5¾ yards of 35-inch. Price 35 cents.

1376. Here is a handsomely fitted go-everywhere frock with slimming princess lines that are a joy to sew, for beginner and expert. Sizes 10, 12, 14, 16, 18, and 20. Bust 31 to 40. Size 12, 32 bust, 6 yards of 39-inch. Price 35 cents.

8116. This new tunic is up to date and becoming to the slightly shorter figure. It also can be made in dress length. Sizes 12½, 14½, 16½, 18½, 20½, 22½, 24½, and 26½. Bust 33 to 47. Size 14½, 35 bust, tunic, 4⅝ yards of 35-inch. Price 35 cents.

8369. This afternoon style is flattering and versatile, as well as slimming. A yoked beauty using two fabrics effectively. Sizes 36, 38, 40, 42, 44, 46, 48, 50, and 52. Bust 38 to 54. Size 38, 40 bust, 4 yards 45-inch; ⅝ yard contrast. Price 35 cents.

Pattern Nos.	Size

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Needlework Album—25 cents.

YOUNG DAIRYMEN — *Getting started in dairy farming* — No. 3

Farming or veterinary medicine?

This was the choice Billy Greear had to make . . . and he went back to the farm on a cash rent basis. Here is a young Virginia dairyman on the move.

by George C. Guilliams

TEAMWORK is paying off as Billy and his wife review DHIA records. Herd is producing 78 pounds fat above previous year. Mrs. Greear works part time to help build up equity in farm.

SUCCESS is more than mere wishing for William Roger Greear, known locally in Montgomery County, Virginia, as "Billy." Hard work with his parents and wife have spelled success in dairying for him and he is proud of it.

You would better understand the meaning of this if you talked with Billy and his wife and looked over the beautiful ranch type, self-styled home they built last year. You would be further impressed with the sincerity of this young dairyman as you looked over his 53 Holstein cows and an equal number of young stock that he has been improving for several years.

If you could hear young Greear talk about the different animals, you would be amazed. To you they look almost alike, but to him each one has specific characteristics that make it peculiar as an individual and deserve the distinction of being treated as such. This is important in making a success of any dairy herd.

Operates 350 acres . . .

Greear is now 24 years of age and is in full charge of the 350-acre dairy farm, Sunny Acre, that he cash rents from his parents, Mr. and Mrs. I. J. Greear. He has two hired helpers on the farm. His father helps on the farm only with odd jobs and good sound advice.

This arrangement with his parents had been anticipated for several years and Billy being the only son in the family made it easier. The oldest child was a girl who, of course, was not interested in managing a dairy farm.

Billy's early interest was farming along with an intense interest in becoming a veterinarian, but a farming career was the victor. As he began to help his father work with the herd and carry dairy projects as part of his supervised farming program in vocational agriculture, he found his place in life. He learned to enjoy caring for the earth's creatures that are so important in the economy and health of our nation today.

Place on home farm . . .

During his work in FFA he developed an interest in registered Holsteins. Then, in surveying and analyzing his farm situation, he found a definite place on the home farm for them. His parents, supporting his enthusiasm, helped him to bring something new to the home farm that is still growing today.

In his freshman year of high school, he attended a purebred sale with his father and his vocational agriculture instructor and purchased a registered Holstein calf.

He added two calves the next year and they have been on the increase since. Today he has 10 registered cows and 16 young registered animals. During Billy's high school career he also helped to get his herd on DHIA test.

Greear has invested $15,570 in farming since starting his registered Holstein herd while an FFA member in high school. As new equipment on the farm was needed he borrowed from the bank and an aunt and uncle loaned money to him for the new home.

College to farm . . .

Billy was able to commute to Virginia Polytechnic Institute at Blacksburg, Virginia, where he received a B. S. degree in dairy husbandry and at the same time continued his interest at home improving the dairy herd.

He was able to finance his college education with his father's help and the $1,227 net income which he received through his farming program in vocational agriculture while in high school.

His interests extended far beyond taking care of his dairy cattle while he was in school and they still do.

He served as reporter, sentinel, vice-president, and president of the local FFA chapter, president of the J. O. Hoge Federation, treasurer of the high school student council, steward and overseer of the Auburn Grange, and president of the freshman class.

Billy was on the FFA dairy judging team two years and on the FFA forestry judging team one year. In college, he represented Virginia on the dairy judging team at Waterloo, Iowa.

He enjoyed sports, too. He played on the school basketball and baseball teams and still plays baseball and basketball on community teams.

In his senior year at Auburn High School he was honored with a trip to the National Future Farmers of America convention at Kansas City as the Federation representative from Montgomery County. He was also awarded the degree of State Farmer at the State FFA convention.

After finishing school, young Greear married a registered nurse who has been very helpful to him in his work. She still works part-time as a private nurse. Both he and his wife are members of a local church.

Willing to change . . .

Knowing that farming is becoming more and more important as fewer people are engaged in it with increased competition, he is continually looking for new and better ways of doing the same old jobs.

Still interested in learning new tricks of the trade, he has been a member of the Riner Young Farmers Chapter for five years, where he has been treasurer and secretary.

He reads farm magazines to see what others are doing and has been a director of the Virginia Artificial Breeding Association from the Montgomery-Pulaski Artificial Breeders Association for five years. He has been able to gain first-hand information on the bulls he is using to improve his herd.

A cow must pay well for her room and board to remain in Greear's herd. They are given an excellent chance to make good as they are fed according to what they do and not what they look like. The DHIA helps in doing this job through the technician's monthly visit.

For the year ending September 30, 1959, the entire herd averaged 9,197 pounds of milk and 349 pounds of butterfat but through May 1960, his herd gave an average in-

The author is vocational agriculture instructor at Auburn High School, Riner, Virginia.

crease of 2,098 pounds of milk and 78 pounds of butterfat over the same period a year earlier. This increase was due to culling and better feeding of the dry cows.

The cows are fed plenty of good corn and grass silage all year round, if needed, and are provided with a good comfortable loafing shed in which to relax. If this doesn't make them pay off, they have had their last chance.

During the year you can see many calves on the pastures of this farm. Billy, knowing the best way to get a good cow is to raise it, seldom sells a heifer calf. He needs them to improve the herd as they should be better than their dams through the artificial breeding service that is available.

Installed pipeline milker . . .

Milking these 50 some cows 730 times a year with a pail-type milker became rather tiring to young Greear and his hired helpers. The full cans became heavier as the milk per cow increased and the number of cows larger. During May a new pipeline milker and bulk tank were installed.

Another improvement on the way is an additional silo because Billy believes that silage is important in high milk production. He is also planning in the future to have a large self-unloading silo.

The increased acreage of grass and alfalfa for silage and hay with smaller amounts of grain is in harmony with his soil and water conservation plan that he follows to help conserve our most valuable resources. This, along with high fertilizer applications to his legumes and pasture, is doing much to insure productive soil for his use now and a good farming foundation for the future.

Young Greear's greatest asset in the field of management is his father, who has been a successful businessman and also a top-notch dairyman for many years.

This, with his wife's support and inspiration, along with his own interest and enthusiasm, is an unbeatable combination in the business of farming. **THE END**

Seven dairy scientists are honored

For outstanding contributions in their fields, seven of the nation's dairy scientists were recognized by the American Dairy Science Association at its annual meeting.

Dr. William E. Petersen, University of Minnesota, received the Award of Honor, the association's highest recognition, for his broad-scope research in milk secretion. His mastitis studies have saved the industry millions of dollars through improved management practices in milking techniques. Cited as his greatest contribution to dairy science is his work on the mode of synthesis of milk constituents by the mammary gland.

Dr. Norman L. Jacobson, Iowa State University, received the Borden Award in Dairy Production. He has made many notable research contributions in studying the interrelationships between rumen fluid characteristics and bloat formation, the relationship of bloat to plant species, and the effectiveness and practicability of several agents for bloat control, especially detergents, antibiotics, and various oils. He has also studied the effect of feeding insecticide-treated alfalfa hay and the results of various hay-concentrate ratios and feeding levels on performance of dairy cows.

Dr. Earl Weaver, Michigan State University, received the Milk Industry Foundation Dairy Science Teaching Award. His dairy science teaching career covers a span of 47 years, starting with instruction of soldiers in Europe following World War I through to a recent tour of duty as an instructor in Colombia, South America.

George M. Werner, University of Wisconsin, received the DeLaval Extension Dairyman Award. He was cited for a long and productive career, making significant contributions to all phases of the dairy extension program, and particularly for his leadership in improving roughage quality and encouraging the expansion of artificial breeding in the state he served.

Dr. W. A. Hardison, Virginia Polytechnic Institute, received the 1960 American Feed Manufacturers Award. He has made significant contributions to dairy cattle nutrition through his studies of copper deficiencies and metabolism in calves. He also has researched the effects of rumen inoculation and the frequency of feeding growing heifers. Other important research has included the development of ratio techniques to determine nutritional values or forages, and studies of factors affecting useful application of these techniques.

Dr. Mark Keeney, University of Maryland, received the Borden Award in Dairy Manufacturing. He is world renowned for his work in the chemistry of milk fats and substances contributing to flavors in processed milks and products.

Dr. Frank V. Kosikowski, Cornell University (New York), received the Paul Lewis Award in Cheese Research. His research in use of Cheddar cheese starter, testing cheese, work leading to improvement in cottage cheese manufacturing, and adaptation of the disk-assay method into a rapid, practical procedure were cited.

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Dean Taylor
Whitewater, Wisconsin

Some of the ABS cows that helped make this one of the top DHIA Holstein herds in the United States.

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The rate for advertising in this department is 35 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX #, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 5 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us one month ahead of date of issue. NEW ADVERTISER MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. Different rate for Livestock Display advertising.

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HORN WEIGHTS. Made in 4 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.75 postpaid, includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY CO., Council Bluffs, Iowa. 4-*

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LARGE DAIRY OR STEER FARM, with buildings to set operation. Completely modern 8-room family home. Dairy barn has cleaner and bulk tank cooler, new steer shed. Complete barn yard in concrete. 120-ft. machine shed. Complete set of other buildings. 170 acres of tillable fertile soil and balance in light woods. On paved road near Lake Geneva, Wisconsin. Contact — SIMONSEN & TIMM, 311 E. Milwaukee Street, Janesville, Wisconsin.

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FOR SALE: North Central Arkansas Grade "A" dairy farm producing 400,000 lbs. yearly with 1223# base. Good Co-op., market. 151 acres plus 60 rented. Sell with or without livestock and machinery. Send for descriptive folder to G. W. KRUGER, RFD, Newark, Arkansas. 14-4

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GRADE A DAIRY FARM near Omaha, Nebraska. Stanchion room for 83 cows in 200' barn, large hayloft. Large calf barn with feed mixing facilities. Bull and dry cow barn. Two modern houses, several smaller buildings. Sell with 40, 100 or 160 acres. FRED EIPPERLE, c/o Eipperhurst Farm, Bennington, Nebraska.

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FOR LONG TERM LEASE — one of top ten dairies in state, in the Gulf Coast area. 600 acres; 100 milking cows and many heifers. Milk parlor — all modern equipment. Base price — $6.41. Modern three bedroom house. Three credit references required. Reply BOX 468, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 12-*

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LARGE FARM FOR RENT, suitable for large dairy herd. Stanchion-type barn, bull, calving pens, large stone calf barn. Paved area. Four 16' x 40' solid concrete silos. Sealed overhead hay storage. Large granary, grinding facilities, grain bins. Water supply in barns. Also streams and springs. Electricity. Excellent condition. Farm cottage available. Located 30 miles from Charlottesville, Virginia. ERIC WOOD, 489 Fifth Ave., New York City. 14-2

RENT: 180-acre dairy farm. Cash basis. Southern Door County. 43 stanchion barn. Full line machinery. Barn cleaner. Prefer selling present herd. WARREN F. KRUSWICK, Rural Route 2, Algoma, Wisconsin.

FARMS WANTED

MORE DAIRY FARMS needed to sell. Extreme Northern Illinois, Southern Wisconsin. H. E. GILBERT, Realtor & Associates, Elkhorn, Wisconsin. (Over 20 years successful experience at your service.) 6-*

POSITIONS WANTED

WORKING FARM MANAGER, married, 2 children. Experienced in beef, dairy, hogs. All types of farming. Can operate all machinery. Have been at present place 3 years. Welcome to come and see condition of farm and livestock. Excellent references. BOX 971, Rochester, Minnesota.

WANTED: Herdsman position. Single, age 22. Outstanding records in 4-H and FFA. Graduate dairy husbandry, Kansas State University. Experienced showman. BOX 492, care Hoard's Dairyman, Fort Atkinson, Wis.

WANTED: Experienced married man to work as assistant herdsman or general farm work. Can furnish best of references. N. SCHAEFER, Mahtomedi, Minnesota.

MARRIED MAN, age 39, lifetime experience with purebred dairy cattle, high school education, looking for permanent position as herdsman, manager, foreman, or operator on dairy farm. Available immediately. Some family help. BOX 498, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

FARM MANAGER or herdsman. Lifetime experience. References. HARVEY CARNES, Route 2, Whitewater, Wisconsin.

WANTED: Position on dairy farm, experienced, sober, reliable, expert milker, furnish references. BOX 494, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

YOUNG IRISH FARMER'S SON, single, working in the city for past seven years, wishes to work vacation month, August, on medium size dairy, hog farm. Thinking of buying farm, wishes to gain experience. BOX 491, care Hoard's Dairyman, Fort Atkinson, Wis.

SINGLE, 24, would like job as a working herdsman, milking cows on a large farm. Don't drink or smoke. Life experience. Have car, will travel anywhere. BOX 486, care Hoard's Dairyman, Fort Atkinson, Wis.

FAMILY MAN, fully qualified in dairy management, Graham graduate, 3 years college, lifetime experience. Large operation, location immaterial. BOX 499, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 14-2

HELP WANTED

WANTED: Experienced artificial breeding technicians. Through our frozen semen program and freezers, areas may be developed in any state. References required. Write PIPER BROTHERS FARMS, Watertown, Wisconsin for details. 8-*

CHILDREN'S INSTITUTION needs manager for 450-acre farm raising beef, pork, chickens, produce. Near metropolitan area. Good pay, regular hours, vacation, retirement plan. Modern 4-room apartment, should like boys and know farming thoroughly. BOX 496, care Hoard's Dairyman, Fort Atkinson, Wis. 14-*

WANTED: Assistant herdsman, experienced. HIR testing. Southern Wisconsin. Registered Holsteins. BOX 493, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 14-3

WANTED: Farm manager by absentee owner of 200-acre dairy farm. Must be good dairyman for top herd of registered Holsteins. Excellent home and farm buildings—complete line of modern machinery and equipment. BOX 500, care Hoard's Dairyman, Fort Atkinson, Wis.

HELP WANTED

WANTED IN NORTH CAROLINA: Industrious young dairyman who knows cows, farm machinery. To work with me, take an interest, learn operations, as after many years in the dairy business I need less responsibility. Might use son too. Large productive farm, pipeline milking parlor, bulk tank, 65 Holsteins. Not interested in college degrees, but a top man with ability. No drinker. Give age, family, experience, wages expected, references. BOX 497, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED: 1st class dairy farmer, 50-50 basis on 500-acre farm. Excellent soil, almost all tillable. Good set of buildings, including two barns. Over 100 stanchions. Two modern homes. Location of farm, Jefferson County, Wisconsin. Now stocked with about 75 cows plus young stock. Excellent opportunity for young ambitious married man to take over monthly payments on one-half of this dairy herd. Must have full line of equipment and sufficient capital to operate farm efficiently. German or Swiss preferred. Give complete history and references in first letter. Please state when available. BOX 487, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HERDSMAN: For 200-cow registered Holstein farm in Michigan. Must milk with and supervise 4 other men in modern parlor. Please state your experience, age, size of family, and salary expected. BOX 489, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED: Single man on dairy farm. Give age, experience, references. Write MILTON KERR, Cambridge, Wisconsin.

WANTED: Young dairyman in Piedmont section of North Carolina who can operate farm machinery. If you are qualified, industrious, reliable, sober, interested in a permanent place, I have a job for you with a future opportunity. Pipeline milking parlor, bulk tank, milking 60 Holstein cows. Old but comfortable 5-room house (wired) near hard surfaced road. Give age, number in family, experience, salary expected, three references (not relatives, past employers) in first letter. BOX 490, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

AGENTS WANTED

CHRISTMAS AND ALL OCCASION CARDS for individuals or organizations to sell. New exclusive 1960 line at 1955 prices. 25 for $1.00 and up. Also personalized cards. Over 400 different items. Stationery, toys, costume jewelry and clever gadgets. Up to 100% profit. No experience needed. Assortments sent on approval. Write STYLE-CRAFT GREETING CARD COMPANY, Dept. E, 5533 Troost, Kansas City, Missouri. 14-3

FARM 200 acres or less? You can make $20 or more daily spare time. Supply customers McNess farm-home necessities. Write McNESS, Freeport 22F, Illinois.

SWINE

FOR SALE: Wisconsin feeder pigs. Sold on weight basis. $13.50 for 40 pounders. Ten cents a lb. either way, making 39 pounders $13.40 and 41 pounders $13.60. Delivered direct from farmer to you. All toppers. CLARENCE ACKER, Middleton, Wisconsin. Phone TErrace 6-3451. 13-*

DOGS

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

SHEPHERDS, COLLIES. Outstanding Heelers. Watch Dogs. ZIMMERMAN FARMS, Flanagan, Illinois. 2-*

POULTRY—BABY CHICKS—DUCKS

BIG Leftovers-Fryers, heavies included, some Pullets, $1.49 to $5.99. 60 breeds. BUSH HATCHERY, Clinton, Missouri. 11-6

HAY AND BEDDING

GRADED DAIRY ALFALFA and other grades hay. ART CALLARI HAY COMPANY, Upper Sandusky, Ohio. 20-*

AUCTIONEER SCHOOLS

LEARN AUCTIONEERING, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

LEARN AUCTIONEERING. Free catalog! MISSOURI AUCTION SCHOOL, Box 9252D4, Kansas City, Missouri. 19-*

OF INTEREST TO WOMEN

AVERAGE $2.00 HOUR sparetime, assembling our lamps. Simple. Easy. No canvassing. Write: OUGOR, Caldwell 24, Arkansas. 4-*

$2.00 HOURLY possible sewing our ready cut aprons at home. Spare or full time. Experience unnecessary. Write A & B ENTERPRISES, Caldwell 17, Arkansas. 6-*

PLASTIC FREEZER CONTAINERS, square pints $9.75, quarts $15.40 per hundred, postpaid. Sample 25c. OXBORO, Box 7031QQ, Minneapolis 11, Minnesota. 14-5

MISCELLANEOUS

PAINT, OUTSIDE titanium, lead and oil. Guaranteed not to peel. $5.95 value, factory price —$2.25 gallon. Free sample. SNOW WHITE PAINT, HD Toledo 2, Ohio. 14-5

DAIRY CATTLE

22 CHOICE HOLSTEIN heifers due September. Calfhood vaccinated, T.B. tested. CARL NEWMAN, Coldwater, Michigan.

MORE SPECIAL OPPORTUNITIES ON NEXT PAGE

Special Opportunities

DAIRY CATTLE

400 HEAD of large Holstein heifers bred for early fall freshening. Calfhood vaccinated. CHESTER FROBERG, Valparaiso, Indiana. Phone HOward 2-1060. 11-4

WE ARE NOW READY to fill your orders for Holstein and Guernsey cows and heifers. Shipped direct from farmer to you on commission basis. CHET BURNSTAD & SON, Tomah, Wisconsin. Phone Tomah 406-M or 752-R-12. 16-*

DAIRY CATTLE SALES, every Thursday, April through October. Top springer cows and heifers. 400 to 600 head every sale. MATTES LIVESTOCK MARKET, Thorp, Wis. 10-*

CANADIAN HOLSTEINS direct from the farms. Registered, T.B. and Bang's certified. MIDDLESEX HOLSTEIN BREEDERS ASSOCIATION. Phone Lambeth OL 2-3616. Hardy Shore, Glanworth, Ontario. 15-*

CANADIAN Registered Holsteins. Young vaccinated cows and heifers. Buy direct from the farms. Elgin County Holstein Breeders Club. Telephone Talbotville, Ontario 6-R-12. DON SHORE, R.R. #6, St. Thomas, Ontario, Canada. 7-*

KENYON BROTHERS FARM serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls. T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone SHerwood 1-1818. 19-*

REGISTERED HOLSTEINS: A few service age bulls, some younger males, foundation females and heifers. Nearly all sired by excellent sires and from classified dams with HIR records. SanMarGale FARMS, Box 265, Lebanon, Ohio. Phone 5-2606. 22-*

BUY YOUR VACCINATED dairy cows and heifers direct from the farmers where quality prevails. GEO. E. SWANSON, Rice Lake, Wisconsin. Phone 944R. 3-25

KEATING BROTHERS FARM offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone JOrdan 5-5805. 18-*

WISCONSIN DAIRY CATTLE, Holsteins. Springing cows and first calf heifers. Heifers for early fall freshening, also open heifers any size. We have drivers available to buy direct from farmers, or will fill orders at your direction. GONNERING BROS., Livestock, Route 1, Kaukauna, Wisconsin. Phone Little Chute ST-8-3332. 7-12

FOR SALE: Holstein springing heifers and cows. Good selection of open and bred heifers. R. B. BRICHER, St. Charles, Illinois. Phone JU-4-2547 days, JU-4-2805 nights. 3-24

HIGH QUALITY Holstein and Guernsey springers and heifers all sizes. J. W. & BILL GEURKINK, telephone 332 or 21F31, Baldwin, Wisconsin. 15-*

CHOICE HOLSTEIN cows and heifers, all ages. Vaccinated. T.B. free. Fieldman available, or will fill orders as directed. Whitewater Dairy Association, DEAN HARNDEN, Whitewater, Wisconsin. Phone Palmyra 358. 1-*

WISCONSIN HOLSTEINS for the Southern states. Heifers and cows on hand at all times, originating from the best producing herds in Southern Wisconsin. Artificial breeding, Bang's and T.B. tested for any state. Call P. R. ELAM, Marshall, North Carolina, phone 3451, or Mars Hill, North Carolina, 2581 nights. 23-*

TOP QUALITY HOLSTEIN springing cows and first calf heifers. Heifers for early fall freshening. We also ship on orders. Write: ELGAS BROTHERS, Jefferson, Wisconsin. 14-4

REGISTERED GUERNSEYS: Cows, heifers, and bulls, service age and younger. Top bloodlines with official records. Accredited herd. Females calfhood vaccinated. Complete dispersal. WENDELL FENDER, one mile west of Buford, Ohio.

FOR SALE: Good quality dairy Holstein cows and heifers. RAYMOND LIPE, Nokomis, Illinois. Phone Nokomis 3334. 14-4

WISCONSIN DAIRY COWS—I am handling good-producing dairy cows for improvement to your dairy herd. If you are interested in a higher milk producing herd, I can supply you with all the good dairy cows you need. Arrangements can be made to make delivery of these cows anywhere in the United States or abroad. Office headquarters are at Columbus, New Jersey. Always a large selection on hand. Write or call RUBEN GREENBERG, Columbus, New Jersey. "A good deal for every dairyman." Mailing address Ruben Greenberg, Columbus, New Jersey—phone Bordentown, N. J., AXminster 8-1021. 14-*

FOR SALE: Guernsey bull, Foremost Footprint Nero. Tattoo No. B89. Sire, Foremost Footprint 351131. Dam, Foremost Missourian Nira 1658573. Born April 27, 1958. For price and information write or call KENNETH LILLY, Hale, Missouri.

25 REGISTERED HOLSTEIN cows. Due to freshen before November. 40 years breeding and testing. FRED APPLEYARD, Neilsville, Wisconsin.

HOLSTEIN springing cows and heifers for sale. Good quality at competitive prices. ALGY BOE, Frederic, Wisconsin. 14-spl.

FOR SALE: 47 springing Holstein heifers, weight 900 to 1000 pounds, T. B. tested, will begin calving September 15th. CARL ALEXANDER, Rural Route 1, Kempton, Indiana. Phone William 7-2528. 13-2

300 HOLSTEIN COWS and large heifers. Some calving every day, close up, and all stages. You won't find as many good uddered and quality cattle at one place anywhere. Buy your choice and be on your way. HARRY BERGER DAIRY CATTLE COMPANY, Rosemount, Minnesota, GArfield 5-4521. 15-11

Sales Announcements

July 27, 1960—Guernseys — Crestwood Farm dispersal, Austin, Minnesota. 11:30 A.M. DST. For catalog write Carl E. Kehret, Austin, Minnesota.

July 30, 1960 Ayrshires—Mid-States Ayrshire Breeders 3rd Consignment Sale, 12:30 E.S.T., 4-H Fairgrounds, Huntington, Indiana. 55 head. For catalog write Glenn Stockadale, Union City, Indiana.

July 30, 1960 Brown Swiss — HyCrest Super Swiss Sale. HyCrest Farm, Leominster, Massachusetts. 11:00 A.M. EDST. 72 head. Norman E. Magnussen, Brown Swiss Sales Service, Lake Mills, Wis.

August 1, 1960 Holsteins & Guernseys—Complete dispersal, Huff Brothers, Glade Spring, Virginia. 10:00 A.M. 130 head. The farm is located on U.S. 11, 15 miles East of Abingdon, Virginia and 15 miles West of Marion, Virginia. For information contact I. H. Huff, Glade Spring, Va.

August 3, 1960 Holsteins—South Carolina State Sale. State fairgrounds, Columbia, South Carolina. 12:00 Noon. 50 head. South Carolina State Holstein Association, N. R. Davis, Secy., Denmark, South Carolina.

August 2, 1960 Holsteins—The Southeastern Show Window Sale, Laurens, South Carolina, Fairgrounds. 84 head. Write, wire or phone for catalog. Nobs, Inc., Box 1015, Tiffin, Ohio. Phone Gibson 7-6262.

August 5, 1960 Holsteins—Hugh McLaurin & Son Bred Heifer Sale, Sumter, South Carolina, Sumter Fairgrounds. 90 Bred Heifers. For more information write Hugh McLaurin of Wedgefield, South Carolina or Piper Bros., Sale Managers, Watertown, Wisconsin.

August 6, 1960 Brown Swiss — Michigan's Vacation Land State Sale. 50 head. 12:00 Noon at the Eaton County fairgrounds, Charlotte, Michigan. Write for catalog today, Ernie Kueffner, Germantown, Wis., Sale Manager and Auctioneer. Sale sponsored by Michigan Brown Swiss Association, Wixom, Michigan.

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COPY MUST REACH US ONE MONTH BEFORE ISSUE DATE

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PHONE 677 SHAWANO, WISCONSIN

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Midwestern Dairymen ! ! !

Fine foundation **SPRINGING** heifers, yearlings, cattle of all ages. These are sold on commission basis to you. We have buyers throughout the northern dairy states and can supply the finest for the best possible price. One of the midwest's largest dealers serving dairymen for the past 8 years. We will deliver C.O.D. to your farm by our experienced drivers. We are moving 300-500 head per week.

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FOR SALE:

150 REGISTERED JERSEYS. Cows and bred heifers. Fresh July, August and September. Accredited, certified and vaccinated. Tested in June without a suspect. Southern buyers can save on transportation and other expense. Best of breeding.

E. P. GULLEDGE, SR. Callisen, S. C.

I have choice high grade bred Jersey and Guernsey heifers, also fresh and springer cows. All T.B. and Bang's tested. Come and make your selection, or will fill your order or help you buy. Phone University 5-4113. **CLAUDE THORNTON,** Route 2, Box 256, Springfield, Mo.

Tristram Basil Baronet

Excellent, Senior Superior Sire

Milk — 29 daus. avg. 10,910 lbs.
Fat — 29 daus. avg. 620 lbs.
Classification—32 daus. avg. 88.13%

A few choice sons are available.

PIXY FARM HUDSON, WISC.

FOR SALE

51 Jerseys — 3 Excellent — 21 Very Good — 1 Good Plus. 6 bred heifers. From one of the Southeast's top herds.

MAX SPIKE Blountsville, Alabama

Brigham Jerseys

WE BRED BRIGHAM ADVANCER JESTER

His first 7 unselected daughters in our herd average 12,526 lbs. Milk, 733 lbs. Fat — — 8 Classified Daughters Average 85.00%

IF WE CAN BREED BULLS GREAT ENOUGH FOR USE IN OUR OWN HERD DON'T YOU AGREE WE CAN BREED

A PRODUCTION BULL FOR YOU?

Write Us For A Suggestion

BRIGHAM FARM ST. ALBANS, VERMONT

BROWN SWISS

WHAT MORE DO YOU WANT

BROWN SWISS CATTLE

- ARE EXCELLENT PRODUCERS:
- HAVE A LONG-MILKING LIFETIME:
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- ARE HARDY AND RUGGED:
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Free Literature on Request

BROWN SWISS BREEDERS' ASSOCIATION
BELOIT WISCONSIN

MICHIGAN'S Vacation Land **STATE SALE**

SATURDAY, AUGUST 6TH

50 HEAD OF TOP BROWN SWISS

12:00 NOON (Lunch Available)

At Eaton County Fairgrounds

CHARLOTTE, MICHIGAN

Featuring base time freshening bred heifers and cows, with records up to 650 lbs. fat, also a few select bulls including a proven bull bred by one of the Nations Top Herd. His Dam "Excellent" 9 yrs., 365 days, 27,325M. 953F.

"For a Brighter Future come to Charlotte, Aug. 6th and buy Brown Swiss for a Better Living."

Terms: Cash or will finance with 25% down. Sale sponsored by Michigan Brown Swiss Assn., Wixom, Mich.

Write for your catalog today.

ERNIE KUEFFNER, Germantown, Wis.
Sale Mgr. and Auctioneer

Buy More U. S. Savings Bonds.

HYCREST Super

SWISS SALE

JULY 30, 1960

Most desirable selection ever offered at any SALE.

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The DIXIELAND and BASEBUILDER SALE

Lincoln County Fairgrounds
FAYETTEVILLE, TENNESSEE

AUGUST 10, 1960 11:00 A.M.

60 HEAD OF SELECTED BROWN SWISS 60

Write today for your catalog to:

DALE HOMER

BOX 254 STERLING, MASS.

AYRSHIRES

AYRSHIRES MOST PROFITABLE COWS

4% MILK

Big Milkers - - Hardy Rustlers
Good Grazers - Perfect Udders

Ayrshire Breeders' Association
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NOW YOU CAN BUY

POLLED AYRSHIRE BULL CALVES

That are from high producing families
That are of Carefree Farms & Penshurst Breeding
That give you excellent type calves
That are priced at prices sure to please

WRITE FOR PEDIGREES AND PRICES

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TOP AYRSHIRE BULL FOR SALE

From a High Record, High Classification Dam Write us about Bull Calf Born March 26, 1960 Sire: Reidina Cor's Bright Star — Dam is a Very Good, 516 lbs. fat daughter of Storm Cloud of Windrow.

LONG LANE FARM

Constructive Breeder 1960—Herd Average 11275 Milk, 461 Fat.

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REGISTERED AYRSHIRE BULL CALVES, double approved sire, dams record 18,880 lbs. milk, 850 butterfat. Also have heifer calves priced reasonable. Write: **GREENFIELD FARM,** Route 2, Box 63, Mukwonago, Wisconsin.

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How to Succeed in Modern Dairying . . . Start a GUERNSEY HERD

Send for FREE handbook on how to start a successful Guernsey Herd. Also includes information on the profitable business of producing and selling Golden Guernsey Milk.

AMERICAN GUERNSEY CATTLE CLUB
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HyCrest Super Swiss Sale

HYCREST Y.C. FARM
LEOMINSTER, MASS.

SATURDAY, JULY 30 11:00 A.M. E.D.S.T.

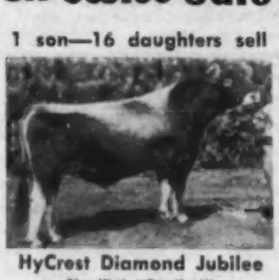
72 Reg. Brown Swiss

2 BULLS 15 COWS
55 BRED AND OPEN HEIFERS

Selected from the Heart of the HyCrest Herd

Selling daughters of Jane's Chloe J.B., Lambs E's Pet, Kilrovocks Leading Lady, Avon View Professor's Lila, and Veruna.

1 son—16 daughters sell



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GUERNSEY DISPERSAL SALE
JAMES P. KELLY
Owner

Monday, August 15
TRENTON, MISSOURI

150 HEAD OF TOP GUERNSEYS SELL
40 REG. GUERNSEYS —
110 HIGH GRADE GUERNSEYS
Herd on D.H.I.A. — 8,713# Milk — 432# B.F. — 4.9 Test.
4 Herd Sires — 75 Cows, 2 to 6 yrs. — 30 Bred Heifers — 30 Open Heifers — 15 Heifer Calves.

Foremost; St. Albans & Ditmarsia's Breeding. You will find the best of Health, Type, Quality, Breeding and Production in this sale offering.

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Purebred Guernsey cows with good production records. Choice heifers all ages, high production inheritance. Yearling bull—highest records three nearest dams, two on 2x milking, average 15377 milk 739 fat.

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Large selection of high grade cows and heifers of all ages. Calfhood vaccinated — lab. tested. We feed well balanced roughage for top production and size. Buy direct and save. Experienced insured transportation.

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Now is the time to check our list of typy, well bred bull calves. If you want production and good type, we can help you. Our bloodlines are famous from coast to coast. Youngsters priced to sell. Come in and see our herd when you are in Wisconsin. Send for price list.

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Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. Lee Burlingham, fieldman, at your service. Waukesha County Guernsey Breeders' Assn., Waukesha, Wisconsin.

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10 MILES NORTHWEST OF COLUMBUS; NORTH OF ROUTE #40; EAST OF ROUTE #33; SOUTH OF ROUTE #161.

180 Head of Registered Guernseys
57 to Freshen Between July and October 1

Premier Exhibitor in Ohio Last 3 Years
Premier Breeder in Indiana, 1959

45 daughters sired by Foremost J. C. Premier, whose dam had over 20,000# milk, 1000# fat. 60 head in calf to him. First daughters milking over 45# per day as 2 year olds; large for age; Premier will also sell.

50 daughters sired by Welcome In Clara Design, an All American bull. 8 of his first daughters average 10,895# milk, 488# fat — 305 M. E. — 2X. Many milking, upon freshening, over 45# per day.

Both senior herd sires to sell. Junior sire which is a Reserve All American plus other bulls out of 18,000# plus milk, 950# fat, dams.

Our cows have records up to 18,448M. — 775 F. — 365 — 2X actual.

Second Nationally in All Americans
7 All Americans to Sell

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Arrangements have been made with Dairy Credit Co., DeKalb, Ill., to finance acceptable purchases at this sale. Only a down payment is needed. Balance on monthly installments. Representative will be at sale. For further information about financing call or write: Dairy Credit Co., 112 East Locust Street, DeKalb, Illinois, Phone 6-4811.

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The Merryman Co., Sparks, Maryland; The Pate Sales Co., 2064 Lawrenceville Rd., Trenton 8, New Jersey; Ohio Guernsey Breeders' Association, Worthington, Ohio; Jack C. Faust Sales Service, Urbana, Ohio.

FOR CATALOG, WRITE TO:
Anson B. Smith — ANSMIL FARMS
5383 GODOWN ROAD COLUMBUS 21, OHIO

Announcing The
First Great Northern Guernsey Classic

Sponsored by: WEST SALEM SALES PAVILION, WEST SALEM, WISCONSIN
Wisconsin Guernsey Breeders' Association and Tri-State Breeders' Cooperative.
Wednesday — September 28, 1960 — (12:30 p.m. CDT)
FIFTY SELECTED REGISTERED GUERNSEYS
These Outstanding animals offered for sale are being consigned by breeders of Wisconsin, Eastern Minnesota and Eastern Iowa. Also consignments from leading breeders outside the area. FOR CATALOGS WRITE:
WISCONSIN GUERNSEY BREEDERS' ASSOCIATION WAUKESHA, WISCONSIN

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BULL OF YOUR CHOICE — NOBA

Noba GIVES YOU THE ONLY THREE-WAY ALL-OUT SERVICE

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The Answer to your Breeding Program—Planned all the way.
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Attend the Southeastern
SHOW WINDOW HOLSTEIN SALE
Laurens, South Carolina **AUGUST 2, 1960** FAIR GROUNDS

Selling 84 Head—Young Cows—Bred and Open Heifers—
All Registered Holsteins—All By NOBA Sires

47 are either daughters or granddaughters of Wis Burke Ideal—All are out of production tested dams — Records up to 20,088 lbs. milk — All are calfhood Vaccinated—21 are from Bangs Certified Herds—All are consigned by their breeder and owner—47 of the top name breeders in Ohio.

WRITE — WIRE — PHONE — FOR CATALOG

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TIFFIN, OHIO
Box 1015

CARNATION BUTTER BOY BUTOR
Born July 27, 1959

A BUTTER BOY SON BACKED BY A HEAVY PRODUCING LONG WEARING COW FAMILY

The Butter Boy son pictured above is a large, straight, well balanced young bull. He is just about ready for light service.

His dam, Carnation Tilda Korndyke Letta "G.P.," is a daughter of Carnation Black Magic. Her best record is 1077 pounds of fat. Her lifetime total to-date, counting the current record not yet official, is 160,014 pounds of milk, 6229 pounds of fat 3.9%. She has a daughter with records of 1024 and 1103 and who is now making what promises to be her third consecutive record over 1000 pounds of fat.

The dam of Carnation Tilda Korndyke Letta is a "Very Good" daughter of Carnation Chieftain with a four-year-old 3x record of 827 pounds of fat and with 2x records up to 732 pounds. The next dam is a 1009 pound fat daughter of Carnation Governor Imperial.

This is a good solid, high producing, long wearing cow family.

Write for pedigree, pictures and price.

Carnation Milk Farm
Address:
CARNATION MILK FARMS
DEPT. #183
Carnation, Washington

THE NEW
Pocket Herd Books

Will let you have the story of your herd with you at sales and meetings. Price $3.50 Postpaid.

ASK FOR SAMPLES TODAY
HOARD'S DAIRYMAN
Fort Atkinson Wisconsin

Complete Dispersal of MILKING HERD
SPRINGING HEIFERS
GRADE A DAIRY EQUIPMENT
HUFF BROS., Owners
GLADE SPRING, VIRGINIA
106 COWS
24 HEIFERS
Monday, Aug. 1, 1960
10:00 A.M. — Lunch Served by P.T.A.

Due to the construction of Interstate Highway 81 all dairy buildings must be removed which forces out the dairy business, after 20 years of continuous operation. They have built up one of the top herds in the state. One half Holsteins the other half Guernseys, mostly grades. D. H. I. A. records from beginning. Herd Certified for Bangs & T. B. and retested within 30 days before sale. Most heifers will freshen in Aug., Sept. or Oct.

I could list 150,000 pounds lifetime cows also 500 pound butterfat records but space does not permit. The profits have been high to them and the cows will do the same for you.

Many repeat customers on springing heifers in the past 3 or 4 years. Only room for one letter of testimony: "All the heifers I have bought from you have freshened and I believe they all will make good cows. I could use some more that are in milk after January 1st. If you have them please quote me prices." (Signed) John K. Short.

No cattle will be sold privately before sale.

Have been using American Breeders breeding service for the last 12 years and the best bulls available. Also selling is a Bayville Farms Guernsey Bull and a Montvic Lochinvar Holstein Bull whose dam produced 13,942 lbs. milk, test 4.4% on 2x milking in 365 days at 39 months of age. His maternal grand dam at 4 years of age in 265 days on 2x milking 15,738 milk, test 4.8% or 750.9 pounds butterfat. What a bull for an Association or your herd.

This section is well stocked with dairy cattle. Unless we have outside buyers they will sell at a sacrifice but all must go regardless of price.

The farm is located on U.S. 11 Highway, 15 miles East of Abingdon, Virginia and 15 miles West of Marion, Virginia. Mr. Huff will be glad to make any reservations as there are new motels near the farm. Splendid train, bus and plane services. Anyone coming by plane to Tri-Cities at Bristol will be met if requested. For other information contact I. H. Huff, Glade Spring, Va. Barn converted into Milking Parlor only 2 years ago. All Surge Equipment consisting of: 8 stalls, milkers, pipe line, Electric Eye automatic washers, Sunset milk tank, etc. Will be sold immediately following sale of cows. Sale must start at 10:00 o'clock.

A. K. GILMER COMPANY, Auctioneers
Lebanon, Virginia

ART CAMENZIND'S
DAIRY CATTLE

200 to 300 head of quality springing Holstein and Guernsey heifers and young cows, year around. Picked for production, type and clean well formed udders. Herds bought and sold. Satisfied customers, lifetime experience. All cattle are well fed and cared for. Mostly calfhood vaccinated and all are tested. Springing heifers shipped on approval, or cattle may be seen anytime. Two miles northwest of

Irvington, Nebraska
ON HIGHWAY 133
PHONE OMAHA, GLENDALE 0091

500 HOLSTEIN HEIFERS

FOR SALE at private treaty. These are large well bred heifers (1100 to 1300), many art. sired. All vaccinated. Will freshen from July to Nov. All eligible for interstate shipment. Come make your selections or we will ship on order.

H. J. WILSON, Catlett, Va.
PHONE STERLING 6-5251

This month we offer the calf pictured above, born January 3, 1960. He is sired by San Mar Gale Wis Nobleman and is out of 500 lb. Wis Della Lucy.

For price and pedigree write:
STOFFELL'S MILK FARM
Route 12 Knoxville, Tennessee

Production Powered Holstein Bulls

We have a few choice bulls from proven cow families, by plus proven sires. Now arriving—sons by Raven Burke Ideal out of cows with up to 812 fat. Our 1959 DHIA herd average was 14,358 milk 3.8% 552 fat. Write or visit us for pedigree and prices. **UNIVERSITY OF NEBRASKA DAIRY DEPARTMENT, LINCOLN, NEBRASKA.**

South Carolina State
HOLSTEIN SALE

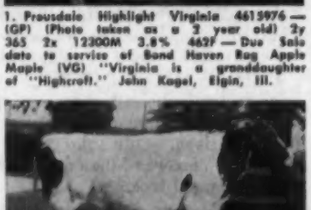
Fairgrounds • Columbia, South Carolina

12:00 Noon • Wednesday, August 3

50 REGISTERED BRED HEIFERS calving in August and early Sept. From dams that average (best records) 14286 lbs. milk, 540 lbs. fat.

1. Prousdale Highlight Virginia 4613976—(GP) (Photo taken as a 3 year old) 2y 365 2x 12300M 3.8% 463F—Due Sale date to service of Bond Haven Rag Apple Maple (VG) "Virginia is a granddaughter of "Highcroft." John Kagel, Elgin, Ill.

3. Tidy Ideal Trademark Jackie 4661536—Sire—Wis Trademark 1195221 (VG) Dam—Tidy Burke Azalea Double (GP) 3y 365 2x 15112M 463F (EA) Kirchner Bros., Gordon Prairie, Ill.



2. Hawthorn Hope Burke 4495959—Sire—Spring Farm Fond Hope 212300 (E) Dam—Gray View Hawthorn Burke Pansy 3582863-3y 365 2x 14276 4.1 592 Bingham & Williams, Huntley, Ill.

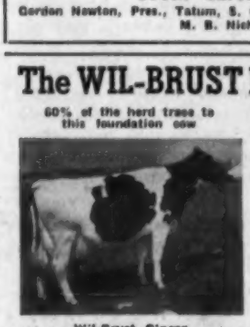
4. Wil-O-Ann Roburke Ideal 4661538 Sire—Pabst Sir Roburke Rag Apple (E-GM) Dam—Susan Gypsie Bill Ideal (GP) 5y 309 2x 15111 3.6 546 Brown & Kirchner, Gordon Prairie, Ill.

Consignments from Iowa, South Carolina, Illinois, Wisconsin and Ontario. Included are 5 dtrs. of Pabst Sir Roburke Rag Apple (Excellent—Gold Medal), 3 dtrs. of Bond Haven Rag Apple Maple and 4 dtrs. of Anthony Rockwood Rocket (Excellent—Gold Medal). 1 dtr. of Spring Farm Fond Hope (Excellent).

South Carolina State Holstein Association
Gordon Newton, Pres., Tatum, S. C. N. R. Davis, Secy., Denmark, S. C.
M. B. Nichols, Sale Coordinator, St. Charles, Ill.

The WIL-BRUST HOLSTEIN SALE *(held at the farm)*

60% of the herd traces to this foundation cow



Wil-Brust Ginger Piebe Ormsby Ex-93

MONDAY, AUG. 15 12:30 CST **45 HEAD**

Dispersing one of the mid-west's top producing registered herds of 22 cows, 12 springing heifers, (19 due to freshen in August and September) 6 heifer calves, 4 young bulls ready for fall service. Last 5 years HIR ave. is 520 fat 14,635 milk. Selling 1 Ex. 5 VG, 12 GP, 3 G, none lower. Progressive Breeders Award 1958. All-State Premier Breeder & Exhibitor 1957-58-59.

All-State Grand Champion for 5 years, nominated All-American Aged Cow 1956 8y 2x 365d 24,938M 925F Lifetime over 5500 fat 150,000 milk and still going. Selling Ginger's own VG show winning 4 yr. old daughter and her full brother, 1960 All-Nebr. Bull Calf, plus many granddaughters.

Harvey Swartz, Waukesha, Wis. Auctioneer
W. A. Weeks, Rockford, Ill. Pedigrees

for catalog write **WILLIS ARMBRUST, owner — MILLARD, NEBRASKA**

MILK RECORD SHEETS, HERD BOOKS

Record keeping is easy when you use Hoard's Dairyman milk record sheets and herd books . . . Send for samples . . . No obligation

HOARD'S DAIRYMAN **FORT ATKINSON, WISCONSIN**

THE DEEP SOUTH
CLASSIC
DEEP IN QUALITY

MONDAY, AUGUST 8 12:00 Noon

At the Chamber of Commerce Fairgrounds
MACON, GEORGIA

65 CAREFULLY SELECTED PUREBRED HOLSTEINS

Certified Accredited Vaccinated

Inka Pietje Veeman
(HER GRANDDAUGHTER SELLS)

Quarryland Piebe Kelco
(HER DAUGHTER SELLS)

GREENWOOD — DUNLOGGINS

FROM J. O. CANBY, LANGHORNE, PA. A daughter of Budd Farm Lauxmont Master from a 483 lbs. 3 yr. old daughter of Greenwood Triumph. Also a daughter of Greenwood Master Della from a 502 lbs. fat 2 yr. old.

FROM FRANK REIST, LEBANON, PA. Two daughters of Ferndale Bellboy, one from a 649 lbs. fat dam, the other from a 537 lbs. dam.

FROM HUBERT S. MILLER, MYERSTOWN, PA. A daughter of Greenwood Tidy Ovation from a 653 lbs. fat dam.

FROM J. ALLEN BAKER, BEDFORD, PA. A daughter of Greenwood Tanner, whose first two daughters to finish have made 551 and 449 lbs. fat and have beautiful udders.

FROM DAVID RESSLER, MYERSTOWN, PA. A daughter of Ferndale Emblem Joe from Quarryland Piebe Kelco, with 652 and 624 lbs. fat and now milking over 100 lbs. a day in her fourth month, with 9000 lbs. of milk and 341 lbs. of fat in her first 90 days on test. The second dam with 747 and 725 lbs. fat.

THE BLOOD OF OLD LUCINDA

FROM ELVIN HESS, JR., STRASBURG, PA. A two year old heifer from a 598 lbs. daughter of Greenacres Promise, she a 914 lbs. daughter of Lincoln Admiral Outlet Peach, the 798 lbs. daughter of "Lucifer," the dam of the two Gold Medal sires, "Dean" and "Regal."

FROM SMITH BROTHERS, SPRINGVILLE, PA. A daughter of Lyon Brook Wallie Queen from a 602 lbs. dam and bred to Smitholm Reflection Luke, A B C Reflection Sovereign son of the great "Excellent" Lucy, Smitholm's great brood cow.

FROM J. ROBERT HESS, STRASBURG, PA. A daughter of Wimarjo Pabst Regal Lucifer "Gold Medal," from a 525 lbs. fat dam.

RAG APPLES

FROM WOODBOURNE, DIMOCK, PA. A daughter of the 548 lb. 3 year old "Very Good" daughter of "Inka," the great All-American, Gold Medal Dam. This one was sired by Inka Pietje Marksman.

A daughter of Sovereign Cochran from a daughter of Master Pride Rag Apple with 24,180 of milk 845.4 of fat. She has other records of 811.5 and 729.8. A daughter of Mr. Ajax from Jessica Rag Apple Alcartra, "Very Good," 87 pts., and with records of 906, 846 and 813.

FROM JOHN C. THOMPSON, NEWTON, PA. A daughter of Glenafton Centurion Bonheur, from a 725 lbs. dam.

FROM JOHN M. UMBLE, ATGLEN, PA. A daughter of Elm Becca Ladysman, from a 595 lbs. dam. Ladysman being a son of Colantha Lady Monogram "Ex," Pennsylvania Champion Producer with two 1000 lbs. 2x records.

FROM THE A. S. HALLOCK ESTATE, LACYVILLE, PA. A daughter of Lauxmont O Nobleman from a dam with 723 lbs. fat at 5 yrs. This heifer's maternal sister has 924 lbs. of fat at 4 yrs.

FROM HIRAM AUNGST, ELIZABETHTOWN, PA. A daughter of Minnequa Hays, a great breeding son of Hays Inspiration, from a 648 lbs. daughter of Litloe Signet Tahari, a son of the former world champion 3 yr. old with 905 lbs. fat.

FROM CARL HIBBARD, SPRINGVILLE, PA. A daughter of Echo Point Dandy Lad, from a 665 lbs. daughter of Dibbson Monchief Champ.

FROM GEORGE A. RUTT, STEVENS, PA. A daughter of Sovereign Commander Antonio from a "Very Good" 602 lbs. daughter of Raymondale Rag Apple Paul.

FROM DONALD WILLIAMS, TUNKHANNOCK, PA. A daughter of Hays Inspiration from a 592 lbs. dam.

FROM LANDON LAWRENCE, HALLSTEAD, PA. A daughter of Hays Inspiration from a 466 lbs. two year old daughter of Pebble Beach Premier.

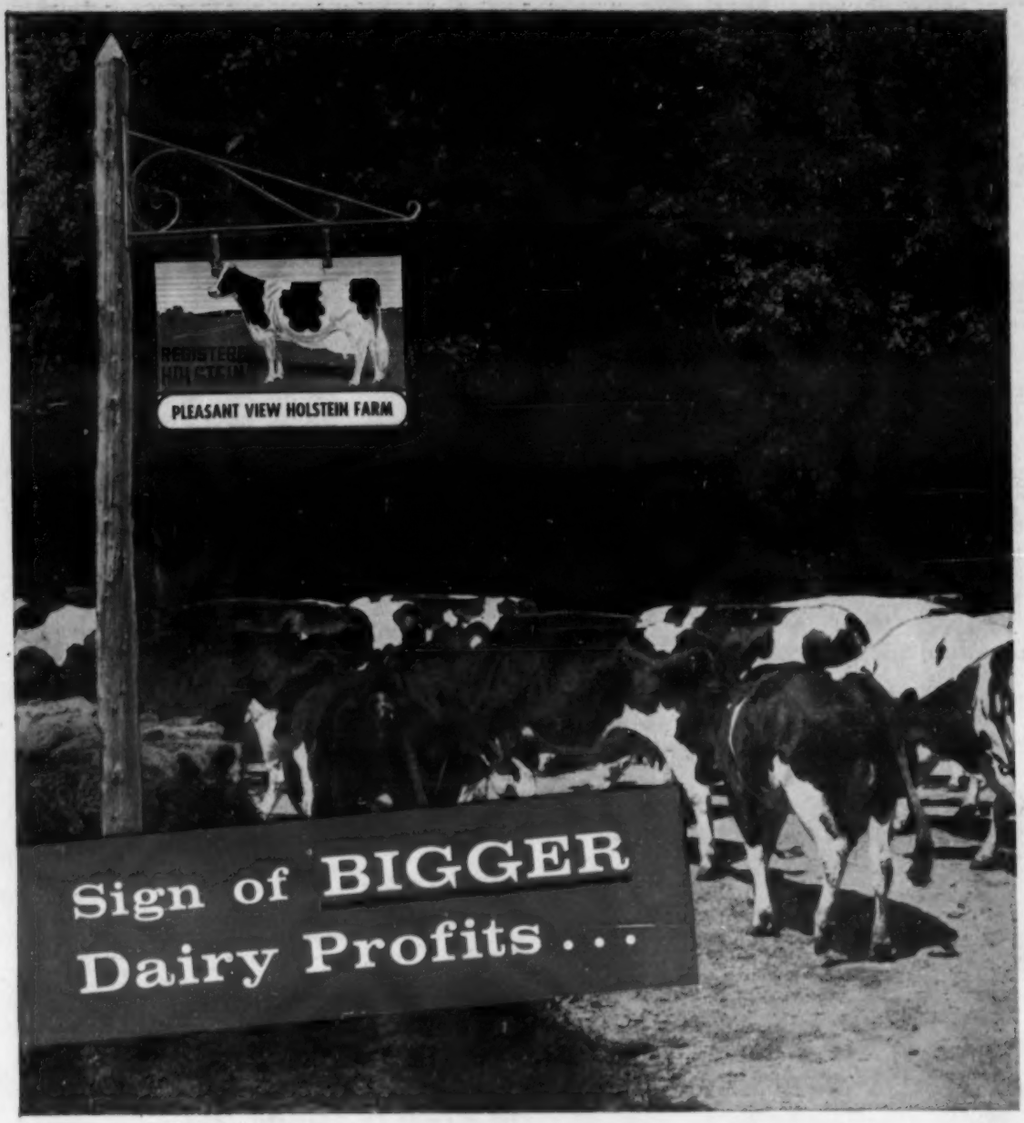
ZIMMERMAN BREEDING

FROM MIDALE FARMS, FACTORYVILLE, PA. A daughter of Zimmerman Star Royalist from a 641 lbs. dam, also a daughter of Zimmerman Lostar Ideal Primo from a 482 lbs. 3 yr. old dam.

FROM EZRA M. MARTIN, EPHRATA, PA. A daughter of Lucifer Spinker Mario from a 538 lbs. 2 yr. old dam.

SPONSORED BY THE
GEORGIA HOLSTEIN ASSOCIATION

Sale Manager: Clarence E. Lyons, 204 Hess Blvd., Lancaster, Pa.



Registered Holsteins

All signs point to a bright future for REGISTERED HOLSTEINS. They fit the farm . . . fit the market . . . fit the times.

Where muzzle meets grass . . . today's bigger dairy profits begin. REGISTERED HOLSTEINS are big-barreled and hungry . . . have the capacity it takes to handle today's big-tonnage roughage at top efficiency.

Where milk meets the pail . . . today's profit scales tip in favor of REGISTERED HOLSTEINS. And where milk meets the test of consumer taste . . . REGISTERED HOLSTEINS really shine. Their moderate-fat milk is in keen demand everywhere.

Your milk harvest lasts many years with long-lived REGISTERED HOLSTEINS. What's more, they produce a *second* cash crop worth a premium price . . . purebred calves.

These are sure signs of bigger profits for you. Investigate REGISTERED HOLSTEINS . . . Breed of the Times.

Registered HOLSTEINS *Breed of the Times*

fit the farm . . . fit the market

THE HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA
BRATTLEBORO, VERMONT

An Opportunity for Bigger Dairy Profits

As a thinking dairyman, you are, of necessity, dollar-conscious. You're interested in bigger profits from your herd and a better living for your family.

If your farm is at all typical, however, it has a more or less fixed capacity. There's a ceiling on how much milk you can produce and, consequently, on the size of your milk check.

In the experience of working dairymen the country over, the answer here is not in more cows or more milk. It lies, instead, in bigger profits from the cows you can reasonably handle.

That's why so many of your neighbors — many of them owners of good grade herds — are switching over to registered Holsteins. Registered Holsteins produce more milk per cow plus a valuable second cash crop — purebred calves.

One of many typical examples is a prominent midwestern dairyman who bought his first registered Holstein cow less than 20 years ago.

At the time, he owned one of his state's best-producing grade Holstein herds. He was always close to the top in DHIA but his surplus cows and heifers were bringing little more than beef price.

Since he completed the switch to registered Holsteins, production is better than ever before. His herd has averaged $385 per cow per year over feed costs for ten years!

In addition, receipts from the sale of breeding stock average out at $65 for every $100 worth of milk sold!

Putting it another way, the registered Holsteins he sells represent 40 percent of his total dairy income! In comparison, cattle sales amount to only 10 percent of the grade herd owner's annual receipts.

And remember, most of the difference is clear profit! Registered Holsteins produce more milk per cow. Their calves cost no more to raise.

Wherever cows are milked for profit, registered Holsteins bring $100-$125 more than grades of similar age and breeding.

This extra value is like money in the bank. In addition to providing extra income when you have cattle to sell, it greatly increases your net worth.

The hard fact that your registered Holstein herd is worth at least $100 a head more improves your credit rating . . . means that your family would have more money to work with if something were to happen to you.

And no matter how you measure dairy income, bigger profits from your operation must begin with bigger profits from every cow in your herd.

Registered Holsteins produce more milk at less cost per 100 lbs. At the same time, you cash in on an increasingly valuable second crop of purebred calves.

If you're still milking grades, this adds up to an opportunity worth serious consideration. You take a big step toward better dairying on the day you buy your first registered Holstein. ADVERTISEMENT

HOLSTEIN HEIFERS AND COWS

All registered and calfhood vaccinated. Largest selection of registered cattle in the Mid-West. Our prices are very reasonable and we deliver anywhere. Every cow guaranteed exactly as represented. Thirty-eight years in the same location. See us before buying dairy cattle of any kind.

Maris H. Green and Sons — Elsie, Michigan

HUGH McLAURIN & SON

Bred Heifer Sale

SUMTER, SOUTH CAROLINA
(SUMTER FAIRGROUNDS)
FRIDAY, AUGUST 5TH

80 HOLSTEIN BRED HEIFERS

These 80 Grade Holstein Bred Heifers are due to freshen for your fall milk base. They are due in August, September and October. These Holstein heifers are mostly **Wisconsin** Bred Heifers and sired by some of the Nation's Greatest Holstein Proven Bred Bulls like, Pabst Leader Walk "Ex," Hickory Creek Spartan Prince "Ex," Carnation Realization "VG," Dix Admiral Burke "VG-8MP," Pabst Sir Comet Admiral "Ex" and Carnation Homestead Skyboy "VG." The Dams of these sires have records up to 1055 lbs. fat and 24219 lbs. milk.

Plan to attend this Great Bred Heifer Sale.
T.B. Tested Bang's Tested Calfhood Vaccinated
FINANCING

Arrangements have been made with the Dairy Credit Co., DeKalb, Illinois to finance acceptable purchases. Only a down payment is needed and the balance on monthly installments. "The cows will pay for themselves as they produce." For more information about financing call or write Dairy Credit Co., DeKalb, Illinois.

For More Information write
Hugh McLaurin of Wedgefield, South Carolina, or Piper Bros., Sale Managers, Watertown, Wis.

FOR WISCONSIN'S TOP QUALITY

HOLSTEIN AND GUERNSEY cows and heifers, all ages, call or write FRANK KRIZEK, Whitelaw, Wis., Route 1—Ph 2-3155, Manitowoc MO 4-4527. Prompt efficient service at lower cost. All cattle bought direct from farmers. No order too large or small. 10 years experience. Will deliver in truck load lots.

SERVICE AGE HERD SIRE

We offer this month a very typy young bull born 3/26/59. His dam classified VG at 2 years of age and produced 12,560 lbs. of milk as a 2 yr. old. Her dam has 17,650 lbs. of milk and is classified VG. This bull is from our best cow family. Call or write Carl Medsker at Graysville 2-3319 or 2-3087 for further information.

MEDSKER FARMS — SULLIVAN, IND.

NORTHERN DAIRY CATTLE DIRECT FROM FARMER BREEDERS

T.B. & Bang's accredited county. Fieldmen sales & service, or orders filled. For information write, call, or wire **Barron Co. Coop. Dairy Cattle Sales Ass'n**, Barron, Wis. Glen L. Krahenbuhl, Mgr. Ph: Lennox 7-3262.

COLUMBIA COUNTY HOLSTEIN BREEDERS' ASS'N

Serving five counties. Offering select quality heifers and young cows, grade and registered, bred for type and production. Also choice, serviceable, registered bulls. Mostly Burke and Carnation breeding. Free fieldman service.

For information write: W. K. WRIGHT, Rt. 1, Columbus, Wis. Ph. Fall River 26F21

WISCONSIN DAIRY CATTLE & HEIFERS

H. A. MEYER CATTLE CO.
PLYMOUTH, WISCONSIN
Phone TW 2-6941

Fieldman Service or will fill your orders.
CONSIGNMENT SALE EVERY TUESDAY.

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300 HEAD of DAIRY COWS

Holsteins, Guernseys fresh and springing heifers for your selection on hand at all times. Come to Dodge County, Wisconsin, 50 miles northwest Milwaukee, where heavy producing Holstein cows are raised from foundation pure breds. Priced to meet your demands. Many heifers out of D.H.I.A. herds. All cattle calfhood vaccinated, transportation facilities for any number.

Ben W. Nehls, Juneau, Wisconsin

Office—Fulton 6-2046
Residence—Turner 5-4584—Beaver Dam

HOLSTEIN DAIRY CATTLE — Registered and Grade cows, heifers of all ages. TB and Bang's tested, calfhood vaccinated. Write or call for free price list. Fieldman service or will fill orders at your direction. **GEORGE PIPER, Watertown, Wis., Phone 2812-W.**

---

100 DAIRY COW AUCTION SALE 100

Lakeland Stock Farm, Addison, Michigan
Wednesday Night, August 3rd
AT 8 O'CLOCK

REGISTERED AND GRADE

WISCONSIN CANADIAN MICHIGAN

Top quality Holstein cows and heifers, some just fresh, balance close springers. Production to 80 lb. daily, T.B. and Bangs Certified. Can go anywhere. Private sales daily. Order buying our specialty. Large selection always on hand.

GEORGE SIPEL, sales manager, Tel. LI 7-1464

HOLSTEINS

REGISTERED AND GRADES

Select foundation Holstein Cows and Heifers with Production, type, and size from our Foundation Wisconsin Herds, Artificial Breeding, Calfhood Vaccinated, Bangs and T.B. Tested.

FINANCING

Arrangements have been made with the Dairy Credit Co., DeKalb, Illinois to finance acceptable purchases. Only a down payment is needed and the balance on monthly installments. "The cows will pay for themselves as they produce." For more information about financing call or write Dairy Credit Co., 112 East Locust Street, DeKalb, Illinois Phone 6-4811.

Plan to come and select your Wisconsin Holstein or we will buy on order at your direction. Fieldman service write or phone.

PIPER BROS.
Box 362 Phone 2170 Watertown, Wisconsin

FOX RIVER VALLEY HOLSTEIN BREEDERS ASSOCIATION

Serving nine counties, in the heart of Wisconsin's dairy land. Foundation registered and top quality grades available, bred for type and production. Over 300 registered breeders in area. All popular Holstein bloodlines. 5 large artificial breeding rings serving the area. Come and make your own selections, or will buy on order at your direction. Fieldman service. Write, wire or phone G. J. STANCHFIELD, Phone WA 25264, 30 Champion Avenue, Fond du Lac, Wisconsin.

BUILD UP YOUR HERD WITH

Wisconsin Dairy Cattle

Holstein - Guernsey - Brown Swiss

COWS, HEIFERS, ALL AGES
Registered and Non-registered

We have 200 to 300 head on hand at all times. Come here and make your own selection. Or we will fill your order on direction from you and deliver C.O.D. on your approval. All animals T.B. and Bang's free, accompanied by health certificates. Delivered in truckload lots to your farm, in our own trucks, by experienced cattlemen.

JAY SHEAFOR, JR.
Rt. 1, Richland Center, Wis.
Midway 7-3209 or Midway 7-2515

BUY HOLSTEINS STRAIGHT FROM "THE HEART!"

Best selection from one of the world's largest dairy counties. Over 15,000 cattle are on D.H.I.A. test and more than 40,000 bred artificially from some of the top proven bulls. Also a few serviceable bulls from high record dams. Fieldman sales and service. For information write: **Frank E. Cairns, Fieldman, City County Bldg. Madison, 9, Wisconsin.**

TEL. ALPINE 6-0513 OR CEDAR 3-5538

DANE COUNTY HOLSTEIN BREEDERS CO-OP ASSOC. MADISON, WIS.

WISCONSIN STATE INSTITUTION

HOLSTEINS

"With development of bloodlines in our institution herds that have proved so outstanding in some of the best herds in the U.S.A., and in many foreign countries, we continue to offer the best in breeding stock.

"The Excellent and Gold Medal animals speak for themselves and with intensified linebreeding their offspring run true to form.

"A number of choice bulls from which to select a herd sire always available.

"For Information and sales lists, write to

FRED M. WHITEMARSH, Farm Supervisor
STATE DEPARTMENT OF PUBLIC WELFARE
State Office Building, Madison, Wisconsin."

Holstein Cows and Heifers

If you're looking for cows or heifers come to Dodge County where good Holsteins are raised. Buy them first-handed and save expenses. We have 250 head of bred and springing grade and purebred Holstein cows and heifers on hand at all times. Can furnish transportation for any number large or small.

LOUIS NEHLS
Phone FULTON 6-4401 Juneau, Wisconsin

Is your subscription running out? Renew now! Five full years only $3.

JEFFERSON COUNTY HOLSTEIN BREEDERS' ASSOCIATION

REGISTERED and GRADE HOLSTEINS

available from top DHIA accredited herds, many using artificial breeding. Heifers at all ages, good young cows.

Free fieldman services. Write-wire-phone for prices:
WILL BETSCHLER, Fieldman
Office in Black Hawk Hotel, Fort Atkinson, Wis.
Phone JOrdan 3-2329
Res. Phone LYnwood 3-2351 at Sullivan, Wis.

WAUKESHA DAIRY CATTLE SALES & SERVICE

Quality Holsteins

Will be glad to help you. We also buy on order. Will fill orders at your direction.

ED WEYKER
P.O. Box 141 Waukesha, Wis.
Call Dousman, Wis. anytime at night.

INTER-COUNTY DAIRY CATTLE ASSOCIATION
BOX 177
WAUKESHA, WIS.

Telephone Liberty 7-3644 or Liberty 2-3726
118 BAXTER STREET WAUKESHA, WISCONSIN

Services of—W. L. Baird—Arthur F. Bennett—James L. Gordon—Reynold Bennett at your disposition.

HOLSTEIN SPECIAL

40 Purebred, Registered Heifers artificially sired and bred — from dams with records up to 700 lbs. of Fat — due in July, August, September and October. Also, a number of high grades. Arrangements have been made for liberal terms—25% down to responsible parties—balance in monthly payments.

ATTEND THESE THREE SALES — SELLING

Over 200 Head of Registered Holsteins

MONDAY, AUG. 8— WISCONSIN DELLS AREA PROMOTIONAL SALE. 65 head registered Holsteins — Friendship, Wis. Sale starts at 12 noon at the fairgrounds at Friendship. Sponsored by the Holstein Breeders of Sauk, Juneau and Adams counties. The sale consists primarily of heifers bred for fall freshening. A few select bulls including an 800# fat son of Wis Memory from the Wis. State Reformatory, a 700# fat son of Grayview Skyliner from Harvey Nelson and Sons. Many heifers from dams with 500-600# fat. Forty breeder consignors from this area have given their best heifers as an introduction to buyers of good cattle to this source of the kind of cattle that satisfy.

TUESDAY, AUG. 16— OSCAR SCHULTZ DISPERSAL — 61 head of registered Holsteins. Sale starts at 11:30 at his farm located on hy. 26, 3½ miles north of Watertown, Wis. His 1959 herd average was 12,957 milk, 444 fat on DHIA. Due to the unfortunate accident of losing both arms in a corn picker last fall Mr. Schultz is forced to sell this highly regarded herd. He has used bulls from the Wis. State Reformatory and Pabst Farms. He has one of the nearest type, good uddered herds it has been our fortune to sell.

Lad Pontiac Bessie Imperial 16,950 milk, 531 fat at 3 yrs.

Both of these animals sell

Lad Ideal Hoosley Boss 12,560 milk, 449 fat at 2 yrs.

WEDNESDAY, AUG. 17— WISCONSIN BREEDER'S SALE, Watertown, Wis. Selling 75 head of registered and high grade Holsteins at the Darcey Sales Arena located 7 miles north of Watertown on hy. 26. Starts 12:30. Included is the dispersal of the W. G. Welles registered Holstein herd. His herd average last year was 12,207 milk, 3.94%, 481 fat. All cattle are sired by proven sires from prominent breeding studs. Also selling 20 head of heifers bred for early fall freshening.

For catalogs of these sales write
Francis Darcey and Sons, Sale Mgrs. WATERTOWN WISCONSIN

NOW SILVER MEDAL PRODUCTION

NEILLEWOOD ROBURKE JOE
"EX - 5MP"

28 dtrs. ave: 14546 — 3.68% — 535 ME
Increase over dams: + 635 M +
17 lbs. Fat. Son of Pabst Sir Roburke Rag Apple.

Improved STUD SERVICE CURTISS FARM

OTTO SCHNERING FOUNDER

Service now available to outstanding sires in all major breeds through locally owned and operated distributorships in 44 states and direct herd service in all other areas.

New territories being opened continuously. Write for information on becoming a technician.

LIQUID AND FROZEN SEMEN

5 Dairy Breeds 3 Beef 1 Dual-Purpose

CURTISS IMPROVED STUD SERVICE, Inc.
CURTISS FARM
Cary, Illinois Phone: MErcury 9-2041

KILL FLIES FAST with genuine BANAFLY® Syrup

BANAFLY can be applied where flies are the thickest — on windows, walls, posts, beams, even the ceiling. Banafly clings and kills on any surface!

Test BANAFLY Syrup on your farm—buy the trial size — use it where flies are the worst — you'll be as pleased as the Minnesota farmer who wrote — "BANAFLY Syrup killed so many flies I weighed them. I found it killed from 1 lb. 10 oz. to 2 lbs. of flies a day!"

Banafly is a spectacular fly killer in dairy barns, hog and poultry houses, livestock shelters — wherever flies are a problem on your farm or outside the house.

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BUY BANAFLY SYRUP...
satisfaction guaranteed
or your money back
4-oz. trial size—$1.00
16-oz. economy size—
$2.95
If your dealer cannot supply you, send us his name and address.

TWO MORE SAFE BANAFLY INSECTICIDES

BANAFLY
Spray Base

Contains pyrethins for quick kill, and repellents to protect cows on pasture. Helps keep milk production up. Avoids residues when used as directed. Mix with water (or oil) to spray directly on cows. Special action helps keep cows show-coat clean. Costs as little as 71¢ per gallon.

BANAFLY
Dry Bait

Contains two powerful fly killers —DDVP and malathion. Two-way action kills **flies** and **maggots.** Scatter regularly in stanchion areas and in calf pens after cleaning for continuous fly control. Grit-size particles won't blow away. Economical—a little treats a big area. Safe when used as directed.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Screwworm time

The natural home of the screwworm fly is in the southern states. Only under exceptionally favorable weather conditions or through shipping livestock from the South does the fly occur as far north as Illinois or Indiana. It derives the name "screwworm" from the general shape of the maggots.

Of all insects, this pest is believed to be the greatest enemy with which the livestock world must contend. Ranchmen have estimated that as much as 85 per cent of their annual livestock loss is caused by this parasite.

Although all screwworm flies breed in animal flesh, one species — the primary screwworm fly — can breed only in living tissue of warm-blooded animals. To be perpetuated, therefore, the fly must find a wounded or diseased spot on an animal's body to lay its eggs for the young to develop. As many as 300 eggs may be laid in an open wound.

In 11 hours, maggots hatch from the eggs and burrow into the living flesh feeding on it from 4 to 7 days. They then drop off to become pupae and then adult flies.

Injury to the animal is inflicted by the maggots. The weakening effect and destruction of tissue kills the infested animal in a few days.

Winter protection . . .

Losses from screwworm attack can be avoided first by preventing a breeding site for the pest, then by decreasing the susceptibility of animals to infestation. The first is the more important step, but the two must go hand-in-hand.

While screwworm control is a year-round chore, results are most effective during the winter when the flies are relatively inactive. Climatic conditions of winter force this pest to retreat to relatively small, favorable areas but, even here, its chances of living are most difficult.

The fly must produce one generation during a four-month period or it is naturally exterminated. Few wounds are available for the flies to lay their eggs when the temperature falls below 55.

Treatment . . .

In areas where screwworms exist prompt treatment of wounds following injury and operation is a **must.** After years of experimenting and testing, the U.S. Department of Agriculture developed a successful remedy for killing larvae in wounds and protecting the wounds against infestation. It is called M-62 or Smear 62.

Two applications are applied to the wound each week until the tissue heals. In some small, rapidly-healing wounds one treatment often gives complete protection.

Recently newer and superior wound dressings have been developed. Most of these contain 3 to 5 per cent lindane and an emulsifying agent.

The best known formula is EQ-335. This product is effective over a longer period than is M-62, but it is advisable to repeat the application every three or four days until the wound is healed.

Since there is risk of transferring infection, it is best to use a separate brush or dauber for each treatment.

The newer lindane larvicides are superior to M-62 because of their fly-killing properties. Many screwworm flies are killed by alighting on lindane-treated wounds.

The use of pincher-type emasculators for castrating animals does not leave open wounds and in screwworm areas many prefer this method. Dehorning should be done when the animal is young or during cold weather.

Eradication of plants which cause scratches or injuries to animals is a good precautionary measure. It is also good practice to have the animals born during the season of least fly activity. Anything else which can be done to reduce occurrence of wounds will aid greatly in screwworm control.

When shipping livestock into states where eradication is in progress, animals must be treated with either EQ-335 or Smear 62 within 36 hours of movement. Inspections and treatments must be recorded on all veterinary health certificates covering animals going into these areas.

NOTE: Since 1958, a dramatic attack on the total screwworm population has been made through the release of radioactively sterile male flies. The prospects are that this livestock hazard may soon be a problem of the past.
—THE EDITORS

VACCINATING BULLS FOR BANG'S

Will there be any effect on bulls if they are vaccinated for brucellosis when they are young, and what effect will it have on them when they are older?
Pinckney, Michigan L.D.

There is no evidence to show that vaccination will have any harmful effect whatsoever on the health or breeding condition of bulls. Actually, it is not too important whether bulls are vaccinated or not. I am of the opinion bulls should not be vaccinated for the reason that the reaction in the blood which occurs following vaccination occasionally persists for varying periods of time.

In such cases it is difficult to determine whether the reaction is from vaccination or infection.

MAGNETS FOR HARDWARE

I would like to know your opinion on the practice of putting magnets in cows' stomachs for the prevention of hardware disease.

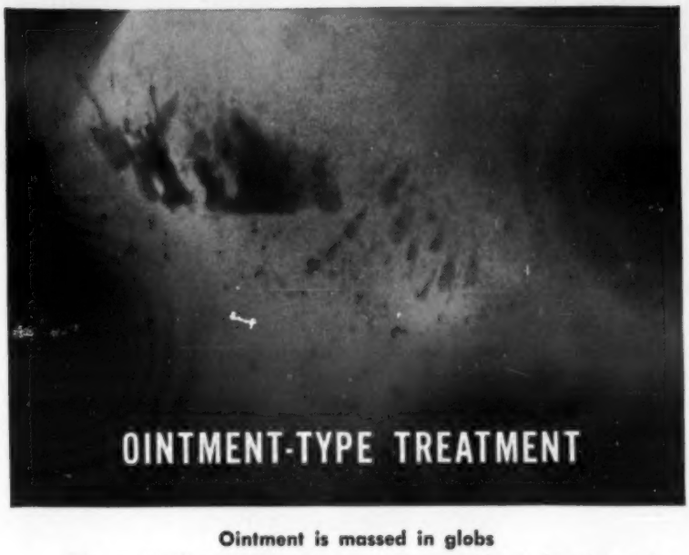
Is it possible that the magnet would cause ulcers?
West Farmington, Ohio R.S.

Placing magnets in cows is a practice that has a place in the handling of hardware problems in cows. However, magnets cannot be relied upon to do a 100 per cent effective job. Every attempt should be made to keep the hardware out of the cow's reach.

So far there is no evidence to show that a magnet itself will cause ulcers or severe irritation in the cow's stomach. If, for example, a piece of wire longer than the magnet is attached to it and the magnet remains there, some irritation or damage may develop.

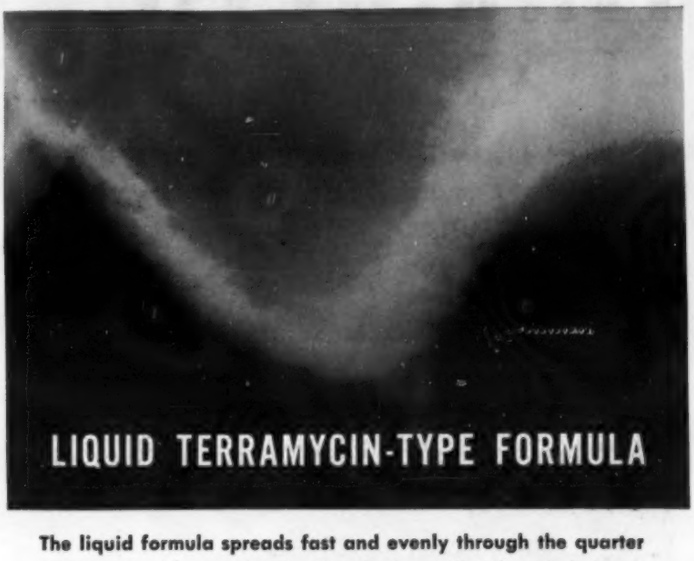
NOW FOR THE FIRST TIME X-RAYS LET YOU . . .

See what happens when you treat for mastitis



Ointment is massed in globs

Only antibiotic particles clinging to the outside of the ointment globs are available to go into solution for fighting mastitis. Treatment is slowed down . . . and your cows never have the benefit of full antibiotic release any time within a single milking period. Photos show that even up to 4 hours after treatment, ointment treatments are still in globs.



The liquid formula spreads fast and evenly through the quarter

This X-ray, 4 hours after treatment, shows that the mix between liquid-type formulation and milk is so good you can't distinguish between them. As milk is secreted, liquid Terramycin-type formula mixes completely and makes maximum contact throughout the milk-producing tissues. All of the Terramycin goes to work immediately . . . everywhere in the quarter where there is secreted milk. Then after it has done its work, it milks out completely within 72 hours.

Terramycin® for Mastitis has

BRAND OF OXYTETRACYCLINE

THE FASTEST ACTION AND MOST COMPLETE COVERAGE IN THE UDDER

Of the preparations on the market today, only Terramycin for Mastitis is superior to other mastitis preparations in four vital areas:

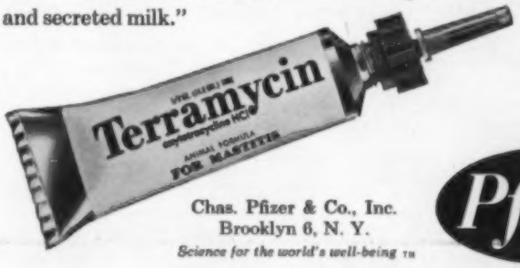
1. It releases all its antibiotic fast for fighting mastitis. (And getting these high levels of disease-fighting antibiotic fast is vitally important to help clear up mastitis and to help protect valuable milk-producing tissue.)
2. It reaches farther, faster for maximum contact . . . with all the milk and milk-secreting tissue throughout the quarter right after use.
3. It mixes thoroughly with milk . . . does its disease-fighting job . . . then milks out faster, cleaner, after its work is done . . . *is milked out completely within 72 hours.*
4. It delivers broad-range germ-fighting action. A drug must be effective against many mastitis germs, 10 or more, not just 3 or 4. No drug is more effective than Terramycin.

Get it today from your animal health supplier for the most effective help you've ever had in licking mastitis.

The X-ray pictures above and the comments below were the result of scientific investigations comparing ointment and liquid-type mastitis formulations. The complete report was published in Veterinary Medicine, February, 1960.

WHAT THIS TEST PROVED:

"The ointment mastitis treatment vehicle tended to float together in a few large clumps and did not show the rapid diffusion necessary to obtain the maximum mammary tissue and secreted milk tissue surface contact. Ideal principles of intramammary treatment with the ointment vehicle were not obtained, whereas the aqueous solution vehicle obtained maximum surface contact throughout the mammary tissue and secreted milk."



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Laboratory and On-the-Farm Tests Prove that

FOR LESS THAN* 2¢

A DARI-KOOL Will Cool 100 lbs. of Milk To Below 38°— On a Yearly Average

*** BASED ON AN ELECTRIC RATE OF 2¢ PER KILOWATT**

In Addition to Low Operating Costs a DARI-KOOL Has the COOLING POWER to More Than Meet the New 3A Cooling Standards—Effective Sept. 1st

ECONOMICAL OPERATION

Numerous laboratory and on-the-farm tests prove that a 1960 model Dari-Kool, operating under full load and normal milkhouse conditions will cool 100 lbs. of milk to 38°, or below, for less than 1 KW of electricity, on a yearly average. In tests run at Youngs' Dairy, Twin Falls, Idaho, a 300 gallon Dari-Kool used only .83 KW of electricity per 100 lbs. of milk.

NEW 3A STANDARDS

On September 1, 1960, the new 3A Standards become effective. They require — *"That the cooling systems for bulk milk tanks shall be capable of preventing the milk in the tank from rising above 50° F at any time during the addition of second or subsequent milkings".*

Enforcement of the new 50° blend temperature regulations can mean *"downgrading"* or possible *"rejection"* for improperly-cooled milk.

"Cut-price" tanks sold with undersized compressors can prove to be mighty *"expensive bargains".*

With a Dari-Kool in your milkhouse you can be SURE that your cooler will more than meet the new regulations. *And your butterfat test will not be lowered by frozen milk, a common fault of many direct-expansion tanks.* Remember 90% of the milk plants cool milk with ice-water systems.

NEW DARI-KOOL TRANSFER STATION

- PUMPS MILK FROM BARN TO TANK
- SAVES MANY MILES OF WALKING EVERY MONTH
- SAVES TIME, WORK AND MONEY

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"WHIRLING HURRICANE" TANK WASHER

- WASHES COOLER "CLEAN AS A DISH"
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BULK MILK COOLER

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Please send Free Catalog and Milkhouse Plan Kit. Also send information about the Dari-Kool Purchase Plan.

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